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WHAT TYPE OF COLLEGE FOR WHAT TYPE OF STUDENT.

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*COLLEGE STUDENTS, HIGH SCHOOL STUDENTS, *STUDENT CHARACTERISTICS, COLLEGE ADMISSION, COLLEGE PREPARATION, *GRADUATION, *UNIVERSITIES, PERFORMANCE, BACKGROUND, ABILITY, PERSONALITY, INDIVIDUAL DIFFERENCES, SOCIOECONOMIC STATUS, MINNEAPOLIS, MINNESOTA

MAJOR OBJECTIVES OF THE STUDY WERE (1) TO COMPARE ENTERING FRESHMAN STUDENTS AT DIFFERENT TYPES OF COLLEGES (THAT IS, UNIVERSITIES, LIBERAL ARTS COLLEGES, STATE COLLEGES, TEACHERS COLLEGES, AND JUNIOR COLLEGES) ON ABILITY, HIGH SCHOOL ACHIEVEMENT, CULTURAL STATUS, ECONOMIC STATUS, AND PERSONALITY FACTORS, (2) TO COMPARE, BY TYPE OF COLLEGE ATTENDED, THE ACADEMIC PERFORMANCE OF STUDENTS MATCHED ON ABILITY, SOCIOECONOMIC, AND PERSONALITY FACTORS, AND (3) TO PREDICT COLLEGE GRADES BY USING SOCIOECONOMIC CLASSIFICATION AND PERSONALITY INDEXES IN CONJUNCTION WITH ABILITY AND ACHIEVEMENT FACTORS, AND TO ASCERTAIN THE RELATIVE IMPORTANCE OF THESE FACTORS AT THE DIFFERENT INSTITUTIONAL TYPES. EACH OF APPROXIMATELY 570 HIGH SCHOOLS (BOTH PUBLIC AND PRIVATE) AGREED TO HAVE ITS SENIOR CLASS COMPLETE A QUESTIONNAIRE DESIGNED TO RELATE SPECIFIC BACKGROUND FACTORS TO POST-HIGH SCHOOL PLANS. SIMILAR DATA WERE GATHERED ON FRESHMAN STUDENTS ENROLLED IN ALL THE COLLEGES AND UNIVERSITIES THROUGHOUT THE STATE OF MINNESOTA. (JH)

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What Type of College for What Type of Student?

Cooperative Research Project No. 2182 (OE-4-10-014)

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Student Counseling Bureau
University of Minnesota
Minneapolis, Minnesota

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Chapter 1

INTRODUCTION

Problem

The college-bound student of today has a wide range of types and sizes of colleges from which to choose. He can choose a university, a liberal arts college, a state college, a teacher's college, or a junior college. The college he chooses can be very large or very small, urban or rural, public or private, secular or nonsecular, coed or non-coed, within commuting distance of his home or across the continent.

The students themselves come from all types of social, economic, and cultural backgrounds. Some are from wealthy families, a few from poverty-stricken backgrounds. Some are from isolated farms, others from large metropolitan and suburban areas. They differ widely on many personality variables. Some are relaxed and easy-going, while others anxious and tense. Some are very socially adept, others socially inept. They differ widely on many factors, such as ability, previous achievement, and motivation.

With such great variance in both colleges and students, it is apparent that some colleges must be better than others for some students. The problem is--what types of colleges for what types of students? Where would a high-ability student from a very low socioeconomic background be most successful--attending a small residential liberal arts college or commuting to a public junior college? Given three students of equal ability and from similar backgrounds, one very out-going and socially adept, the second introverted and shy, and the third a rebellious non-conformer--which should attend a large college and which a small? Which should commute and which should go away to college?

It very obviously does make a difference which type of college a student attends. After students get to college, their achievement there varies widely at all levels of ability. An estimated 50 per cent of them drop out before graduation. Indeed, it is now apparent that the greatest loss to society of high-ability young people not trained to their fullest potential occurs at the college level. At one time this "dropout loss" occurred primarily among able high school students leaving high school before graduation. More recently dropout loss was due primarily to the large number of able students graduating from high school but not continuing their education beyond this point. Efforts by society to reduce this loss have resulted in high school guidance programs and national programs of scholarships and loans to college-bound students. These have been relatively successful so that now most able young people undertake some form of post-high school education. It is now in the colleges where the biggest dropout loss is taking place. Information which would help match students to colleges which they are likely to find compatible and where they are likely to be successful will be useful to both the student and society.

Such information was sought in this investigation by examining the relationship between a number of background and personality factors and both the student's choice of college and his achievement during his freshman year at that college. Information about the ability, high school achievement, social, economic, and cultural status, and certain personality characteristics was available on all of the Minnesota college-bound 1961 high school seniors in Minnesota.

The personality variables included the results of a short inventory dealing with social conformity and social adjustment--two factors which have been found to be related to academic achievement as well as to the decision to attend college. For each student who actually attended college in Minnesota, the scholastic record for the first year of his college work was obtained. Thus, for this investigation, a great deal of information was gathered on an entire state-wide class of college students.

Relatively little is known about the relationship of personality characteristics of students either to actual grades received in college or to whether or not the student drops out. Certain socioeconomic and cultural background factors have been found to be related to achievement in certain colleges and not in others. In this study it was possible to investigate these relationships in all of the different colleges and types of colleges in Minnesota.

The authors realize that in examining academic achievement as measured by grades, only one type of successful activity in college is measured. While a student may be successful in receiving adequate grades he may or may not be successful in many other aspects of college life which may influence whether or not he continues in college. In dealing with a population of the size studied here, other indices of success were not available. Academic achievement was the only criterion studied. In this study we examine then, the relationship between various characteristics of the student and his academic achievement in a variety of the different types of colleges and the college environments.

Objectives

This study concerns itself with the success of students in different colleges. Its major objectives were: 1) to compare entering-freshman students at different colleges and different types of colleges on ability, high school achievement, cultural status, economic status, and personality factors; 2) to compare, by type of college attended, the academic performance of students matched on ability, socioeconomic, and personality factors; and 3) to predict college grades by using socioeconomic classification and personality indices in conjunction with ability and achievement factors, and to ascertain the relative importance of these factors at different types of institutions.

Chapter 2

RELATED RESEARCH

A plethora of research exists relating college performance to various background factors. As early as 1949, we find Garrett summarizing publications relating college achievement to high school grades and scholastic aptitude and achievement test scores (Garrett, 1949).

In the 10 to 20 years elapsing since that early summary and their attendant long bibliographies, it is safe to say that literally hundreds of articles have been published dealing with college performance, its precedents, and its concomitants. In reviewing "related research" it has been necessary for the authors to select out of the numerous available studies those that have most relevance to the major objectives the authors set for themselves. These objectives, repeated from the introduction, are:

1. To compare entering freshman students at different colleges and different types of colleges on ability, high school achievement, cultural status, economic status, and personality factors;

2. To compare, by type of college attended, the academic performance of students matched on ability, socioeconomic, and personality factors; and

3. To predict college grades by using socioeconomic classification and personality indices in conjunction with ability and achievement factors, and to ascertain the relative importance of these factors at different types of institutions.

Thus, studies relevant to the current study will be mostly large-scale studies, preferably across several institutions, which involve a host of factors relating to selection of college and to academic performance after getting there. However, as the current study stresses as well the relationship of personality variables to college performance, a number of studies will be cited which are based on single institutions. Again the authors caution that academic achievement, as measured by grades, is the chief criterion used in their study. The study of the future may well address itself to multiple criteria of college performance as well as to multiple antecedents in the prediction domain.

The tone for the more complex and sophisticated study of colleges, of the entering-college student, of his subsequent performance, and of the interaction of students with their college environment received comprehensive treatment in the volume, The American College, edited by Sanford (Sanford, 1962). In setting the tone of this volume, Sanford in Chapter 1 poses higher education as a social problem. From an early study of Wedge's in 1958, he cites that there are "types" of students on campus - the intellectual, the athletic, the vocationally oriented, and the mixed group which appears composed of intellectually competent students who are not deeply committed to anything. It appears that the "entering" freshmen are an "input" variable to the college environment and that their basic attitudes and values do not change much. Indeed, four years of college may make students more like one another, according to Jacobs in 1957.

In Chapter 2, Sanford discusses higher education as a field of study, stating that the major task of educational research is to discover and demonstrate how students change in desired ways according to whatever theory of change a given college operates under. One of the three key elements in this process is "the resistance to change." It is the characteristics of entering college students to all colleges across an entire state and how these characteristics relate to academic performance across individual colleges and across types of colleges that the current study addresses itself.

The title of the current research is "What Type of College for What Type of Student?" Sanford, in setting the tone of The American College, in Chapter 2, is liberal in his use of the word "type" in referring to colleges. He says, "There are various general characteristics that have not so far been considered: Type of education (technical, liberal, so forth), level of training offered, type of control (public and private), type of student body (men, women, or both), religious affiliation, geographical position, and size of city in which located. Since these characteristics are easily determined, and since colleges differ very markedly with respect to them, they have an important role in natural experimentation, referred to earlier." He says further, "Different institutions attract or select or develop different types of students. The general policies and practices of a given institution will have to be based on what all students have in common and if the policies and practices are appropriate they will take into account those common features that distinguish these students from those entering other institutions." Of the students he says, "It follows, therefore, that our psychology and sociology of development in college will have to include significant and emperically demonstrated typologies of students . . . We may assign individuals to type membership when we observe in them the specified qualities and amounts and relationships. But it should be noted the student is not the type and that it is not quite correct to say that the student belongs to the type either; the type is the set of related variables; . . ." He continues, ". . . forces from outside are likely to be important. For one thing, the student's parents are very much in the picture. Of course, the student has already incorporated many parental influences into his personality, but these influences are very much alive, and parental hopes, expectations, and values are continually brought to bear. Much the same can be said for the home community. The attitudes and values that the student has acquired, by virtue of his social class and cultural background, are reinforced when he returns home or communicates with friends who remain there."

In Chapter 3 of The American College, written by Riesman and Jencks, the authors under the title, "The Viability of the American College" trace briefly the forces that have lead to the founding of colleges. It is clear that the aims of the various colleges reflect the value systems of large ethnic and/or economic groups. In turn, these aims can be said to cater to the value systems of large groups of students who "choose" a given college or who "are selected" by a given college because of the seen compatability of the college aims and personal goals. Colleges having a clear-cut religious affiliation furnish the best example of the selection of college because of compatability of college aims and personal goals; however, a similar kind of "selection" is also apparent for other social and economic reasons. The current research, then, shall attempt to assess all the colleges within one state, to first see the extent of student types in different colleges, and second, to see what relation the type of student the college has to the student's performance in the college.

In Chapter 5, McConnell and Heist treat "The Diverse College Student Population." First they cite the Learned and Wood study which points out the variation in knowledge among students. They next cite several large-scale studies which demonstrate the great variability among colleges on scholastic aptitude. The data of Berdie, Corcoran and Keller, Darley, Havighurst, Heist, Stice, White, and Wolfle all agree on tremendous variability on the academic aptitude variable both across students going to college and planning to go to college, as well as across colleges when mean academic aptitude of colleges are studied. Darley's study is particularly relevant here, as Darley studied a sample of 200 institutions across the entire country. Mean institutional scores on the ACE Psychological Examination range from 37.5 to 142.2. For the 60,539 students in these institutions, the mean ACE score was 104.4, with a standard deviation of 27.1. Thus, the institutional means represent almost four standard deviations of the individual student's standard deviation. Darley was able to further show that institutional differences were related to geographic location, level of degree granting, type of administrative control (public, private, church, etc.). Further, the wide range of institutional means was shown to hold within each geographic region for the level and type of control variables.

Following their review of the studies showing this variation of academic aptitude among students and across colleges, McConnell and Heist pose some knotty questions about heterogeneity and/or homogeneity of student bodies. What of the student's motivation as he finds he is equal to, more able than, or less able than, most of the other students in his institution? As each institution seems to get at least a few students of exceptionally high academic ability, does this represent a "mismating" of student and institution when most other students in a given institution are of middle or low ability? Further, if a college is highly selective in terms of scholastic aptitude, is it, or should it be, highly selective in terms of cultural background, attitudes, and values? And finally they ask, "What kind of student mix with respect to a wide range of characteristics would be most productive for students with different patterns of interest, abilities, attitudes, values, emotional histories and social backgrounds?"

Turning next to diversity in non-intellective factors, McConnell and Heist cite the studies of Weissman, Darley, and Hagenah, Stewart and Strong, which do show different patterns of interests across institutions and across groups by college major. The current report does not cover interest measures and interest types directly. They are covered only as they can be inferred from the biographical, socioeconomic, and personality variables studied.

When attitudinal factors are studied across institutions, the data seems less clear. The studies cited by McConnell and Heist on this factor are few in number and less relevant to the current study. Though inter-institutional diversity is found, the authors say, "But, in the light of the diversity among the institutions, it is surprising that the differences in students' orientations are not greater . . . the diversity that is discernible among institutions and groups of institutions seems to be obscured by the great similarity of students' thinking from campus to campus." Numerous studies can be cited where within one institution, personality variables, usually as measured by some inventory, are studied in terms of academic achievement. However, when one looks for studies across institutions, such studies are few in number. McConnell and Heist cite only a few. Gough, using the California Personality Inventory;

Heist and Williams, using the Omnibus Personality Inventory; Stern, Stein, and Bloom, and Stern and Cope, studying categories of students; and Heist and Webster comparing on many personality variables; do demonstrate variability across institutions. But there appears to be little evidence demonstrating that differences in these variables are related to various achievements in the different institutions. McConnell and Heist summarize by saying, "All too little is known statistically or experimentally about the relationship between the personality characteristics students bring to college and their academic achievement, either in the conventional sense of grades and persistence or in the more subtle sense of independent, critical, and creative intellectual competence."

In Chapter 20 of The American College, Fishman presents a social-psychological theory for selecting and guiding college students. He states that in the area of selection and guidance of college students, there were 580 publications from 1948 to 1958. He summarizes them briefly by saying, "The most usual predictors are high school grades and scores on a standardized measure of scholastic aptitude. The usual criterion is the freshman average. The average multiple correlation obtained when aiming the usual predictors at the usual criterion is approximately .55. The gain in the multiple correlation upon adding a personality test score to one or both of the usual predictors, holding the criterion constant, is usually less than +.05." Of the 580 studies mentioned by Fishman, a summary indicates that 90 used only non-intellective predictors and 78 used both intellective and non-intellective predictors. When considering the criteria, 24 studies used only non-intellective criteria and 17 used both intellective and non-intellective criteria. Fishman analyzes high school grades as actually a combined intellective and non-intellective predictor and presents a theoretical predictive model calling for both intellective and non-intellective factors in both the predictor and criterion variables.

The college as a factor in the student's achievement has received considerable attention in the past few years. In Chapter 21 of The American College, Stern sets the framework for this approach. He speaks of student ecology, meaning here the relationship of the student to his environment. He cites the Stern, Stein, and Bloom study which demonstrated differences across two institutions on student types classified as authoritarian, anti-authoritarian, rational, and irrational and some early studies on how these backgrounds may influence classroom performance. Stern also describes the development of a College Characteristics Index and an Activities Index by which students can be studied in terms of the colleges they attend. It is clear that the students differ significantly from institution to institution. Though this chapter presents a significant trend in assessing students' performance, it is presenting an embryo idea and it is not within its scope to show how college environments and student needs interact to affect students' choice of college and their performance once they get there.

The American College is a significant book for anyone interested in education and doing research on the educational process. It's chief relevance for the current study is in its setting the stage for the multiple-predictor, multiple-criterion study of students' performances and for setting the college environment as a variable to be assessed as 1) colleges select students and 2) students select colleges, thus posing important questions as to how these processes interact to affect students' performances.

A whole series of Minnesota studies are relevant to the current research. Under the auspices of a State-Wide Testing Program, sponsored by the Association of Minnesota Colleges, summaries of the scholastic aptitude of entering freshmen to Minnesota colleges have been available from 1938 to the present. These were summarized for the period of 1938-1959 by Berdie, Layton, Hagenah and Swanson in Who Goes to College? (Berdie, et al, 1962). Like other studies on academic aptitude, the Minnesota studies emphasize the diversity of academic aptitude across colleges, but even more important, they demonstrate the persistence over more than two decades of the pattern of diversity found among colleges. Clearly, types of colleges exist and persist in terms of academic aptitude of their incoming freshmen and they change their relative standing little, if at all, with respect to mean scores on scholastic aptitude tests and achievement indices.

Three times, in 1954 (Berdie, et al, 1955), 1959 (Swanson, et al, 1961), and 1961 (Swanson, et al, 1963), the Minnesota studies expanded beyond presenting just descriptive data on entering freshmen in terms of high school achievement and scholastic aptitude and added follow-up studies relating these variables to first-year grades. The 1961 study is one of the chief bases for the current study and the 1954 and 1959 studies are cited heavily in the main text so they will not be cited at length here.

Though they deal with post high school plans of high school seniors, the "After High School - What?" study of Berdie (Berdie, 1954) of all Minnesota high school seniors in 1950 and the repeat study of all Minnesota high school seniors in 1961 by Berdie and Hood are particularly relevant here. But like the 1961 Minnesota college follow-up study, the 1961 "After High School - What?" is one of the chief sources of data for the current research. As it is discussed heavily in the main text of this report, it too will not be cited at this point.

A similar study to Berdie's and to Berdie's and Hood's was published in 1956 by Stice, Mollenkopf, and Torgerson. Unlike the Minnesota study which approached a 100% total sample of seniors in both public and private high schools within one state, this research sampled 30,000 public high school seniors in 478 high schools throughout the United States. Like the Berdie and Hood studies, Stice's 1956 study analyzed a high-ability group (top 30 percent on an academic aptitude test).

Many other large-scale follow-ups of high school graduates exist. In 1941, Anderson and Berning wrote on "What Happens to Minnesota High School Graduates?" In 1952 Havemann and West published They Went to College, and in 1941, Pace studied Minnesota college-goers in They Went to College.

Most of these studies, though large-scale, of appropriate design, and adequate for the purposes they set themselves, appear only tangentially related to the current study. None of them have direct bearing on the systematic comparison across colleges of the types of students entering different colleges and how these types of students perform in college once they get there.

In another early large-scale study in Pennsylvania, that of Learned and Wood (1938), The Student and His Knowledge, the authors did use an experimental model in which inter- and intra-college variability was studied and the ramifications of this variability explored. This study addressed itself primarily to the knowledge, as measured by achievement tests, that students in Pennsylvania colleges possessed. It is pertinent to the current study in that it emphasized the tremendous variability that existed across the Pennsylvania colleges. In addition, it compared results of the achievement test of the college students to results on the same tests administered to high school seniors. On a combination of test scores in which 1222 points were possible, median scores of college sophomores for 49 institutions ranged from 125 to 425 points, where college sophomores as a group had a median score of 254, high school seniors as a group a median score of 179, and a sample of college seniors a median score of 314. Median scores for sophomores at several colleges were below the median of the high school seniors, and median scores for sophomores at several other colleges were above the median for college seniors.

In a sense, the knowledge that students possess defines a "type" of college. However, Learned and Wood did not systematically relate the knowledge variable to socioeconomic, biographical, and personality variables which in turn can be used to define a type of college.

Type of college, how it enters into students' choices of college, and how factors relating to choice of college affect performance in college have received more and more attention. In 1960, Pace, in reviewing five college environments, said, "Which types of students will profit most by which types of institutions is the next question on the research agenda" (Pace, 1960). Even earlier, Stern was discussing student choices of colleges, pointing out that students seek to attend institutions which will support their need structures. Students with serious intellectual interests and strong academic motivation, coupled with a high degree of intellectual independence may be expected to choose a college in this image and thrive in its atmosphere. Students who are intellectually conventioned, dependent, and rigid would likely leave such a college soon, finding it uncongenial and threatening (Stern, 1959).

Knueppel did an intensive study comparing 17 private with 11 public institutions. She concluded that there were no characteristics whose presence or absence distinguished one group from the other though she did find marked differences between them in the quantities or qualities of several characteristics such as ratio of out-of-state students, type of home community from which students came, distance from home to college attended, income level of students' families, occupational levels of fathers, distribution of mental ability and achievement, future plans for graduate work, family experience with college going, number and amount of scholarships received, attendance at college of first choice, reasons for not attending the first choice college, motivation for higher education, reasons for choosing a college to attend, and degree of satisfaction with college chosen (Knueppel, 1959).

Goodstein, in a large scale attempt to show the necessity of regional norms for college students on the Minnesota Multiphasic Personality Inventory, studied eight colleges and universities. An analysis of variance of means and standard deviations showed no significant regional differences (Goodstein, 1954).

McConnell, in a general treatment of public higher education and with particular reference to studies done at the Center for Study of Higher Education, describes long term studies which will attempt to determine the way in which institutions exert their influence on students and affect student characteristics, if they do. One study cited by McConnell indicated students did not choose colleges for particular types of educational opportunities, indicating that the diversity of higher education, so real to educators, may be less clear and less understood by students than is generally thought (McConnell, 1962). In another publication, McConnell, again citing studies at the Center for Study of Higher Education, showed differences in values students held in comparison of public and private schools. In a test of Thinking Introversion, designed to measure liking for ideas as ideas rather than their practical values, National Merit students who attended public universities had lower scores than those attending liberal arts colleges, Ivy League universities, and other private institutions (McConnell, 1961).

Holland has done considerable work with students' choices of college, scholarship winners, and other-than-academic predictors. In one early study, Holland found that students winning National Merit awards more often chose institutions that could be tagged "highly productive" in the sense that a large proportion of their graduates earned the doctorate degree (Holland, 1957). In another study of Merit finalists in 1957, Holland explored answers to the question, "Why did you choose ________ college?" His general conclusions were that students select colleges for the factors of institutional status, size, location, religious affiliation, liberal arts orientation, coeducational status, and popularity and that student factors entering into these choices were socioeconomic status, sex differences, and personality needs (Holland, 1958). However, the study did not go on to show how, or if, these factors made differences in achievement across colleges.

In another study, however, Holland did study a large number of factors as related to college achievement. This study had the significant feature of using both multiple predictors and multiple criteria. The predictors included potential achievement and high school achievement scales and the Vocational Preference Inventory. It also used a variety of other scales and indices: Indecision Scale, Range of Experiences, Intellectual Resources in the Home, Range of Competencies, the Deferred Gratification Scale, Super Ego Scale, etc. The criteria included achievements in leadership, science, dramatic arts, literature, music, art, and college grades. Combinations of from three to five predictors were tried in multiple regression equations. Substantial and significant correlations were found. In summarizing the study, Holland suggests we can predict freshman achievement with simple scales as well as we can with the best combinations of a variety of more elaborate and expensive predictors. His principal findings are consistent with a substantial literature which reveals that a student's achievement is positively associated with his interests, goals, and self-conceptions (Holland, 1963). Holland did not in this study systematically compare how these variables, both predictors and criteria, vary in their predictive ability across institutions.

Holland's several studies, as well as studies by Astin are of good design, rich in use of multiple predictors, and they predict achievement criteria other than grades. In many of their reports they have used personality measures. They have studied determinants of college choice and the influence of college environment. The studies are somewhat limited, however, for generalization purposes, because many of them deal with National Merit Scholarship winners and the findings are not always directly comparable to similar studies which deal with the full sprectrum of ability levels.

Astin has made important contributions to our knowledge about productivity of colleges. He has concluded that the characteristics of students entering colleges have more to do with the colleges' productivity than does the college environmental press (Astin, 1961). In another study, Astin compared 334 Merit Scholars with non-Merit scholars. Though he found differences in the socioeconomic backgrounds of the groups, their aspirations, their educational plans, and that Merit Scholars achieved more in both adademic and creative fields, when the comparisons were made between matched samples, the differences between the Scholars and non-scholars did not appear due to the more affluent socioeconomic background of the Merit Scholars (Astin, 1964).

The National Merit Scholarship Program has afforded a number of studies on Merit participants and Merit winners and reports many projects in progress. Like the comment made on Holland's and Astin's studies, they do lack generality, concerned as they are with highly selected academic ability students. Silovsky and Anderson (1960) studied high school students taking Merit examinations comparing them with students from the same schools not taking Merit exams. High positive correlations were found between self-evaluation scores and Merit humanities scores (.60) and self-evaluation scores and science scores (.48), with Merit participants having significantly higher scores on the self-evaluation tests. Studies too numerous to cite have used personality tests in attempts to study college achievement. Only a few have made any comparisons at all across different colleges. Brown (1960) used the Minnesota Counseling Inventory (MCI) to identify college dropouts and did compare across three Minnesota colleges. Male dropouts were significantly different from the persisters only on the C (conformity) scale while the female dropouts were significantly higher than the persisters on several of the MCI scales and showed some minor variations across the three colleges.

Centi (1961) used the MMPI and the California Inventory of Academic Adjustment (CIAA) to study students selected from the extremes of grade point averages (GPA). Significant differences were found between the high and low GPA groups favoring the high's in the expected direction, but unfortunately correction was not made for scholastic ability. Drake and Oetting (1957) used MMPI patterns in a study of academic achievement. A group of freshmen with an 89-0 pattern with 5 high was compared to a group of freshmen with an 89-0 pattern with 5 low. The total freshman group was used for comparison purposes. The authors' hypotheses, that the 5 not-high-pattern group would have lower grades than the 5 high-pattern group, who in turn would not be different from the total freshman group, were substantiated at statistically significant levels.

Gough (1953) had early worked out personality scales to predict scholastic achievement. In this study, a 36-item scale developed from the CPI was found to correlate with achievement in college from .30 to above .40, while its correlation with IQ tests was low. Hackett (1955, 1960) using a small sample and MMPI results derived an MMPI scale called the z-scale which had high correlations with grades and low correlations with an academic ability test. Inspection of the items led him to the conclusion that low achievers resembled the "authoritarian personality." Jensen (1958) categorized groups on the basis of actual and predicted grades and then used the MMPI scales to compare the groups. Only a few of the MMPI comparisons were significantly different across the groups and the differences were greater across ability levels than achievement levels. Eysenck (1959) defined groups on the basis of hypotheses about neuroticism and extroversion and demonstrated that scores on a personality inventory gave significant differences in the expected direction.

Slater (1960) studied the persistence of college males in terms of father's occupation. Persistence appeared more related to the curriculum than to father's occupation, ie, students in vocationally oriented curricula had higher persistence rates than those in general curricula. He did find that students in curricula similar to their father's occupation had a higher persistence rate than students in curricula unrelated to their father's occupation. Slocum (1956) studied mortality of several hundred students at Washington State University. The study suffers from poor statistics but the author reports differences between dropouts and persisters in a number of socioeconomic and biographical variables such as occupational plans when entering college, parents' educational and occupational level, and participation in extracurricular activities. He found an important exception in the general trend of the results, that children of farm laborers and foremen had a high survival rate. He found no rural-urban differences on plans for completing college, and on size and type of high school attended. Washburne (1959) compared prediction of grades using socioeconomic status (SES) variables between a small southwestern college and a large, private, northeastern college. Most SES variables did not correlate significantly with grades, though in the southwestern college, "urbanism" correlated .31 with grades.

Duff and Siegel (1960) identified over- and under-achievers in terms of discrepancies between grade point averages (GPA) and scores on the ACE Psychological Examination using Siegel's Biographical Inventory for Students (BIS) on 1454 freshmen at Miami University in 1958. In general, group correlations with the BIS showed a negative correlation with physical, social, and heterosexual activities. However, group patterns differed from the total. High Ability, over-achieving females tend to conform to social requirements, participate more actively in religious functions and less actively in aesthetic functions than high-ability under-achieving females and over-achieving low-ability males showed high participation in political and intellectual activities. Erb (1961) studied conformity and achievement in college by selecting samples of students near the mean on the School and College Aptitude Test (SCAT) and having them Q-sort items thought to be related to college achievement (self concepts, moods, attitudes toward achievement, etc.) From the Q-sorts, a conformity scale was developed. The mean conformity score was higher for females than for males. Conformity was found to be significantly related to first semester grades for females but not for males. Ikenberry (1961), in a study of persistence, using an analysis of variance technique, found three factors with significant differences between dropouts and persisters. Persisters were higher on "Intellective Function" and Cultural-Sex Function" while dropouts were higher on "Social Background Function" with sex and achievement differences removed. Ikenberry suggests certain factors lead to middle class students persisting while leading lower class students to withdrawing. Rezler (1960) studied personal values and achievement with some controlling through academic ability measures. A number of differences were shown in personal values between dropout, failing, and succeeding groups.

Ramsey (1962), using a discriminant function analysis, studied a large sample of first year Harvard students in terms of seven independent variables (father's occupation, family income, type of secondary school, religious affiliation, regional and urban or non-urban residence, and ancestral background) and of three dependent variables (college GPA, Law School Admissions Test scores, and law school GPA). In descending order of importance, the following showed significant relationships: type of secondary school, family income, father's occupation, region of residence, and religious affiliation.

In reviewing samples of studies, most of them in the early 1960's, on the relation of college achievement to high school achievement, scholastic aptitude scores and to biographical, socioeconomic, personality, and attitudinal variables, one is struck by the enormous number of the studies, the numerous variables that have been studied, and the many different methodologies used. One is forced to ask if it has all lead to anything in that the differences of authors' viewpoints, subjects used, variables studied, and methodologies invoked make it almost impossible to systematically generalize across even a few studies. It is hoped the broad-based attack of the current study, using a very large number of somewhat similar subjects with a goodly number of variables the same across many colleges, and umbrellaed under whatever homogeneity one state (Minnesota) can provide for the high school experiences and college activities of its students, may lead to the shedding of some light, and to some insights, into this jungle of findings.

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Chapter 3

PROCEDURE

This study was possible because of a great deal of information available on an entire state-wide population of college-bound students. Questionnaire data was available on all 1961 Minnesota high school graduates, both public and private, who graduated from a Minnesota high school that year. In addition, first-year college grades were available for all freshmen entering Minnesota colleges in the fall of 1961.

Questionnaire Data

Information on students' family, economic, cultural, social, and personality backgrounds was available from a questionnaire completed by these students in their high school in January of their senior year. The questionnaire entitled "After High School--What?" had been developed to relate these factors to the students' post-high-school plans. A copy of the questionnaire is shown in the Appendix. The questionnaire was completed by over 97 per cent of the 46,000 students graduating from Minnesota high schools in 1961.

The questionnaire was similar to one used in a previous study in 1950. Most of the questions used in this questionnaire were left unchanged from the 1950 study. In the earlier study, elaborate pre-testing had been undertaken and in addition, comparisons had been made between information provided by students on the questionnaire and information obtained from parents in interviews. From the 1950 study, the data provided by these items appeared reliable and the assumption was made that this would also be true for the 1961 questionnaire. The most significant change in the 1961 questionnaire consisted of the addition of 25 items at the end of the questionnaire to elicit information regarding attitudes and values.

Test Scores

The students' high school ranks and scores on a scholastic aptitude and English achievement test were available on almost all high school graduates from the Minnesota State-Wide Testing Program, in which, in the junior year of high school, they are tested and information is gathered about their high school achievement and educational plans.

The college aptitude test, the Minnesota Scholastic Aptitude Test (MSAT), was administered during the winter of the students' junior year in high school. It provided a single score predictive of success in Minnesota colleges. The test is a shortened, time-limited form of the Ohio Psychological Examination, Form 26, developed by Professor W. L. Layton and Professor H. A. Toops (Berdie, Layton, Swanson, et al., 1962).

The high school percentile rank was based on all of the grades earned by the student during his freshman, sophomore, and junior or sophomore and junior years in high school, depending upon whether he was in a three- or four-year high school. The rank shows the relative standing of the student in his class. A percentile rank of 100 places him within the top 1 per cent; a percentile rank of 1 places him within the lower 1 per cent; a percentile rank of 64 indicates that 64 per cent of the students obtained grade point averages equal to or less than his. The high school percentile rank is one of the best indicators of academic success in Minnesota colleges. Whereas the Minnesota Scholastic Aptitude Test tends to predict grades as well as would be indicated by a correlation coefficient of .45 to .55, the high school percentile rank provides a correlation coefficient of .50 to .60. Combined, high school percentile rank and Minnesota Scholastic Aptitude Test score predict as well as would be indicated by a correlation coefficient between .55 and .65.

High School Achievement and Scholastic Aptitude Scores

Under the sponsorship of the Association of Minnesota Colleges which pays for the program, the Student Counseling Bureau administers the Minnesota College State-Wide Testing Program in which a scholastic aptitude test is administered in the junior year of high school and high school achievement data is collected at the end of the junior year. Each biennium, or oftener when significant changes are made in the program, the Student Counseling Bureau conducts a "Survey of Scholastic Aptitude in Minnesota Colleges" for the Association. Each college furnishes a list of its entering freshmen to the Student Counseling Bureau which then finds the high school percentile rank (HSR) and the scholastic aptitude score for each student. The 1961 high school seniors had taken the Minnesota Scholastic Aptitude Test in their junior year. Summary reports are then published showing means and standard deviations for these variables by sex, by college, by type of college, and for the total group. In 1961, in addition to the Survey of Scholastic Aptitude, all Minnesota colleges furnished the Counseling Bureau with first year grade averages for their freshmen in 1961-62. Thus for this group, HSR, a scholastic aptitude score, and college achievement data were available for all 1961 high school graduates who went to a Minnesota college the fall of 1961 and who had completed the "After High School--What?" questionnaire.

In this study the achievement criterion used was the over-all grade point average for the entire freshman year. For those students who dropped out of college without completing their freshman year, grade point average was based on achievement of one semester or one or two quarters during which the student was enrolled. Students who had not completed at least one quarter or semester were not included.

Sample of Students

Of the 46,000 seniors graduating from Minnesota high schools in 1961, approximately 18,000, or 41 per cent, attended college the following September. Among the college-bound students, approximately 15,000 attended college in Minnesota. For this group of 15,000 freshmen, an attempt was made to locate the questionnaire data, the test scores, and the grades received in whatever college the student attended. For certain of the students, some of these different types of data were missing. Others of this group attended college for only a short period of time in the fall and dropped out before obtaining any grades. On a small group, the information could not be matched with any degree of certainty so that this group could not be included in this study. The three types of information were found and matched for 12,405 students--6959 males and 5446 females. The numbers are shown for each of the different types of colleges in the state broken down by sex in Table 3-1.

Table 3-1

Number of Minnesota Freshmen in Each Type of College

Type of College	Male	Female
University of Minnesota	3145	2065
Private Liberal Arts Colleges	827	901
Catholic Men's Colleges	657	
Catholic Women's Colleges		541
Junior Colleges	857	595
State Colleges	1473	1344
Total N	6959	5446
Total N Male and Female	12,405	

Sample of Colleges

All of the regionally accredited four-year colleges and all of the public junior colleges in Minnesota were included in this study. Included were the eight Private Liberal Arts Colleges in the state, the three Catholic Men's Colleges (liberal arts), the four Catholic Women's Colleges (liberal arts), the five public State Colleges, and the ten public Junior Colleges. One private junior college was also included. Five of the colleges of the University and two of the branches of the University were included. This number includes all of the colleges at the University which admit any substantial number of freshman students. Several small departments at the University, which admit only a few students to non-degree programs, such as dental hygiene and X-ray technology, were not included. The only institutions of higher education in the state which were not included in this study were several small non-accredited Bible colleges and several religious seminaries. In all, 38 colleges were included--31 separate institutions plus the seven colleges of the University of Minnesota.

Analysis of Data

Many of the types of analysis in this study were done with regression equations or the data used in analysis were taken from computer programs which included regression equations. In such an analysis, all types of data must be available for the entire sample. Therefore, if a student left any of the questionnaire items used in analysis blank, he had to be eliminated from the entire analysis. Therefore, on certain of the analyses in this study, the numbers are considerably reduced from those shown in Table 3-1. Other types of analysis, such as those dealing with ability and grades alone, or with individual items of the questionnaire, include the entire population of students studied.

In a few cases analysis was done for the entire population of college freshmen. However, in most cases, this population was divided by sex and according to type of college attended. Each of the major units of the University which receive entering freshmen were analyzed as separate groups. The private, protestant-related, coeducational liberal arts colleges were analyzed singly and as a group. Three Catholic Men's Colleges were treated as a group as were four Catholic Women's Colleges. The ten Junior Colleges were sometimes treated as a total group and sometimes divided into Range Junior Colleges and Other Junior Colleges. The Range Junior Colleges are all located on Minnesota's iron range and a large proportion of the parents of the students who enter these colleges are or were employed in the iron mining industry. The Other Junior Colleges are located in smaller cities in the state, a number of them in the more prosperous farming areas of the state. The five State Colleges were formerly state teacher's colleges but now offer more diverse curricula. These five State Colleges were also analyzed both individually and as a separate group.

In the initial analysis, differences among the different colleges and the types of colleges were explored by computing distributions, means, and percentages for each of the different types of ability, socioeconomic, and personality variables. After these differences had been noted, the extent to which each of these different types of variables was related to achievement in college was found. After this, the relationship of each of these different types of variables was explored through the use of multiple regression analysis to determine which of the variables were related to achievement in the different types of colleges after ability and previous achievement record had been taken into account. This type of analysis also yielded the maximum variance in the prediction of college achievement which could be accounted for when all of these variables--ability, achievement, socioeconomic background, cultural status of home--and certain personality variables were taken into account.

Particular groups of college-entering freshmen, such as those from farms, those from lower socioeconomic groups, those of particular levels of ability, and those with particular personality characteristics, were studied as separate samples. The achievement of these groups in each of the different types of colleges was studied.

Chapter 4

SUMMARY OF RESULTS

The purpose of this study was to investigate the relationship between a number of ability, background, and personality factors and the students' academic achievement in various types of colleges. The major objectives of the study have been summarized in Chapter 1 and the population studied and the procedures used have been summarized in Chapter 3. The results discussed in the remaining chapters are summarized briefly here. The results are listed by the number of the chapter in which they are reported. The reader interested in examining further the results reported below may therefore go directly to the chapter in which the data leading to these conclusions is reported.

Results

5-a The mean high school percentile rank for the more than 12,000 entering freshmen studied was 67.2.

5-b In the typical college studied, the mean high school percentile rank for entering-freshman girls was approximately 11 points higher than the mean for entering-freshman boys. A similar difference was found among all students in all high schools in the state.

5-c In terms of both high school rank and scholastic aptitude test scores, the means for the different types of colleges ranged in the following descending order: Private Liberal Arts Colleges, Catholic Women's Colleges, Catholic Men's Colleges, Junior Colleges, and State Colleges. The means for the various colleges of the state university fell at varying points throughout the range of the means of the other colleges listed here.

6-a The different colleges in Minnesota differed considerably in level of ability as measured both by high school record and test scores of their entering-freshman classes. Large differences were also found in the grading distributions of various colleges and there was little relationship between the ability level in a particular college and the distribution of grades in that college.

6-b The grade point average that a given student obtains in college is related to how his ability compares with the other students in that college with whom he is competing and to the grading distribution in that college.

6-c The proportion of able students receiving failing grades varies considerably among the different colleges and the largest proportions of able students who receive unsatisfactory grades are found in the University's Institute of Technology and College of Liberal Arts.

6-d By comparing the distribution of abilities and grade point averages obtained by students in each of the colleges in the state, it was possible to develop a "difficulty index" for each college. It was possible to validate this "difficulty index" by examining the grades achieved by transfer students in each of the colleges they attended. The "difficulty index" proved to be an accurate predictor of grades students achieved after transferring.

7-a Although differences in socioeconomic backgrounds were found among students attending the different types of colleges in the state, these differences are not as large as might be expected. All types of colleges have students coming from all types of socioeconomic backgrounds. Both the more expenseve private colleges and the less expensive state and junior colleges attract substantial proportions of their entering freshmen from both professional families and from families of unskilled laborers.

7-b Engineering students at the University's Institute of Technology are no more likely to come from families of skilled tradesmen or factory workers than are students in the University's College of Liberal Arts.

7-c Students from farm backgrounds who plan to study liberal arts subjects in college are far more likely to attend a private college or a state or junior college than they are to enter the College of Liberal Arts at the large metropolitan University of Minnesota.

7-d Almost all male college freshmen feel that their parents want them to attend college. Among the girls attending public colleges and universities, 10 to 15 per cent feel their parents are indifferent to their attending or in fact actually do not want them to attend college.

7-e Among all of the entering-college freshmen in the state, 12 per cent reported less than 25 books in their homes and an additional 22 per cent reported less than 50 books. There were large differences among the types of colleges on this variable. One half of the students entering Private Liberal Arts Colleges reported over 100 books in their homes as compared with approximately a quarter of those attending State and Junior Colleges.

7-f Thirty per cent of the entering-freshman males and 17 per cent of the entering-freshman females have plans to attend graduate or professional school after completing their undergraduate college work. There were large differences among freshmen in different types of colleges with these plans. Almost half of the men attending Private Liberal Arts Colleges had such plans as compared with less than one fifth of the male freshmen attending State Colleges. Twenty-one per cent of the girls at Private Liberal Arts Colleges planned on graduate or professional work as compared with 12 per cent in the Junior and State Colleges.

8-a On all types of college campuses, girls appear to be better socially adjusted and more extroverted than boys. Males in the University's College of Agriculture and Institute of Technology were less socially skilled and more introverted than were boys who attended liberal arts colleges. Among students attending liberal arts colleges, there was no tendency for poorer socially adjusted students to attend either smaller colleges or non-coeducational colleges.

8-b There was no tendency for the more rebellious, non-conforming students to attend larger institutions or to leave home to attend college.

8-c Males attending Catholic Men's Colleges appeared to be significantly more rebellious and less responsible than males in other types of liberal arts colleges.

8-d Willingness to take risks appeared to be related to the type of college the student chose to attend. Students of both sexes who attended the larger heterogeneous state university appeared to be the most willing to take risks and to be the least concerned with security.

9-a In most colleges studied, high school rank was a better predictor of grades than scholastic aptitude test score.

9-b Scholastic aptitude test score showed a higher relationship to college achievement for women than for men. In general, women's grades were more predictable than men's.

9-c In most Junior Colleges, there was a high relationship between high school grades and college grades. In most Junior Colleges, no other variables added significantly to the prediction of Junior College grades from that obtained from high school rank alone.

10-a Socioeconomic background was unrelated to achievement in college in most types of institutions. In certain of the more expensive, private colleges, students from lower socioeconomic backgrounds achieved significantly higher grades. Apparently the few students from lower socioeconomic backgrounds in these colleges were able students who were there on scholarships. This relationship disappeared completely when ability and high school achievement record were controlled.

11-a Several personality items from the Conformity scale were significantly related to college grades. Scores on the Conformity scale also showed a significant relationship to grades in most colleges.

11-b Personality items from the Social Relations scale were significantly related to academic achievement in only a few of the colleges.

11-c Students who obtained scores on the Conformity scale indicating non-conforming, rebellious behavior obtained significantly lower grades in college. Students obtaining scores on the Social Relations scale indicating introversion and difficulty in interpersonal relationships, obtained slightly better college grades.

11-d In certain colleges, the multiple correlation coefficient obtained by using all of the personality items approached that obtained from high school rank and test score. In most cases, however, the addition of personality variables in a multiple correlation equation to high school rank and MSAT, did not significantly raise the correlation coefficient from that obtained from these two variables and college grades.

12-a High school rank was the best predictor of college grades. In most cases, scholastic aptitude test scores added significantly to high school rank in the prediction of grade point average. Few other variables added significantly to the prediction of grades when added to high school rank and scholastic aptitude test score. Although the addition of other variables to the prediction obtained from high school rank and test score alone did significantly raise predictive efficiency (from .65 to .70 in the typical college), these findings do not justify the addition of other such variables to the predictions of college achievement in most institutions. Certain colleges, however, could make use of some of these variables.

13-a In the typical college, students from farms have significantly higher high school ranks than do nonfarm students. They have significantly lower scholastic aptitude test scores than do nonfarm students. In college they achieve significantly higher grade point averages than do nonfarm students. Students from farms, then, over-achieve in college when compared to their scholastic aptitude test scores, but live up to their higher high school achievement records by achieving higher grades in college. When the achievement records of farm students are compared across different types of colleges, it was found that they over-achieve slightly in the University's College of Agriculture and under-achieve slightly in the University's College of Liberal Arts--differences not found among other types of colleges.

13-b Male freshmen from farm backgrounds report being more shy and less comfortable in social situations than other nonfarm freshmen. This difference was not found for female freshmen from farms.

14-a Students from lower class backgrounds did not differ in their patterns of academic achievement from other students in any of the types of colleges studied.

14-b College-bound students from lower class backgrounds tend to be more responsible and less individualistic than other college students.

15-a There was a tendency for introverted, poorer socially adjusted college students who were equal in ability to other students, to obtain slightly higher grades in high school and in college. This tendency was the most pronounced for men in the University's College of Agriculture and Institute of Technology. These two colleges attracted the students with the poorest social adjustment and it was there that social adjustment showed the highest relationship to grades.

16-a Students with high scores on the Conformity scale (indicating more rebellion and less responsibility) achieved high school grades and college grades significantly lower than those of other students although these students had test scores equal to those of other entering freshmen.

16-b The non-conforming, rebellious male student attending the large state university's Institute of Technology or College of Liberal Arts was less likely to carry over his record of under-achievement at the college level than he was if he attended other types of institutions.

17-a Students responding "yes" to the following item: "Would you say that your high school grades are a fairly accurate reflection of your ability?"

obtain significantly higher grades in all colleges than did students responding "no". Responses to this item showed as high a relationship to college grades in most colleges as did scholastic aptitude test scores.

17-b Responses to the item of grades reflecting ability showed a moderate relationship to high school grades but no relationship to tested ability.

17-c There were large differences among types of colleges in the proportions of their entering freshmen who responded positively and negatively to the item dealing with high school grades reflecting ability.

17-d It made little difference what a student's level of ability and achievement actually were. It did not matter whether his perception between the relationship of his ability and achievement was accurate or not. For students al all levels of achievement and ability, those who answered "yes", that their high school grades did reflect their ability, achieved higher grades in college than did those who answered "no".

Conclusions

The results listed above give very few answers posed by the title of this project, "What Type of College for What Type of Student?" For only a few groups of students, such as boys from farms and the rebellious non-conformers, do the results suggest the types of colleges where they are more likely to succeed academically.

The results of this study did, however, reveal many differences among the types of colleges that have relevance for almost all students rather than particular groups of them. Differences in ability levels and in grading distributions among different institutions can be particularly important. There is little relationship between the ability level of students in a particular college and the grading distribution of that college. The combination of these two factors greatly affect the success and failure rates of students at all levels of ability. Other differences among institutions, such as in the socioeconomic backgrounds of their students, showed little relationship to academic achievement of students at any type of college among students from any type of background.

We have stated before that the greatest loss to society of high ability young people not trained to their fullest potential now occurs at the college level. The portion of this study dealing with ability levels and grading distributions (which we had not planned to conduct) revealed that the largest contributing factor to college attrition must be grading distribution. Furthermore, as long as these distributions remain at their present level, a high level of attrition must continue.

The socioeconomic and personality variables studied in this project showed only small relationship to college success at least as measured by college grades. It is recommended that further studies of the success of students in various types of colleges examine other measures of college success beyond that indicated by grade point average alone. Furthermore, the relationship of personality and socioeconomic factors to measures of satisfaction with different types of colleges as well as the relationship of these factors to causes of college drop-outs other than academic failure should also be examined.

Chapter 5

HIGH SCHOOL RANK AND MINNESOTA SCHOLASTIC APTITUDE TEST DIFFERENCES

Chapter 5 will be concerned with differences among means and standard deviations of high school rank (HSR) and Minnesota Scholastic Aptitude Test (MSAT) raw scores across individual colleges and the groups of colleges used in this study. This chapter will be limited to descriptive data in terms of means and standard deviations and the relationship of HSR and MSAT scores to grades will be discussed in greater detail in Chapter 9. As a great deal of information already exists about Minnesota colleges and groups of colleges from 1937 to the present (Berdie, et al, 1962; Swanson, et al, 1962), Chapter 5 will be brief and is only intended to provide the necessary background for the present study to those not familiar with the Minnesota college State-Wide Testing Program. The operation of this program was described briefly in Chapter 3.

All Minnesota colleges use HSR as one criterion for admitting students. Many of them also use MSAT scores, at least implicitly, while a few, such as the University of Minnesota's College of Liberal Arts, state formal requirements for HSR and MSAT.[1] Thus when interpreting the means and standard deviations as evidence of the quality of student input into a college, it must be remembered that these means and standard deviations highly reflect admissions policies. Many of the publicly supported colleges (especially the State and Junior Colleges) have, up to this point, operated on a mandate requiring them to admit any bona fide Minnesota high school graduate. The University's General College has been following a policy of requiring only high school graduation for its entrants from Minnesota high schools. In addition to such standards of selectivity which the various colleges may impose in terms of HSR and MSAT, many of the Minnesota liberal arts colleges limit the number of new students they will take from Minnesota high schools, aiming for a more cosmopolitan student body make-up. Several of them also use the College Entrance Examination Board tests as an admissions requirement.

As stated elsewhere, this study involves only Minnesota high school graduates of 1961 who went to a Minnesota college the fall of 1961 and who obtained a grade point average. When comparing across colleges and groups of colleges, statistics presented will be for the total group although sex differences will be discussed briefly.

Differences on High School Rank

For a reference point around which to view these differences, the mean and standard deviation of HSR for all students being studied, is 67.2 and 24.24

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[1] From 1932 through 1964 the University's liberal arts college has averaged HSR and the MSAT percentile rank, requiring the average to be 40 or higher.

respectively. Table 6-5 shows the means and standard deviations for the individual colleges. HSR means range from 34.2 (the University's General College) to 92.8 (a Private Liberal Arts College). The State and Junior Colleges have HSR means below the total mean while the liberal arts colleges (including Catholic) all fall above the total HSR mean, with one exception. The University's College of Liberal Arts falls at about the middle of all liberal arts colleges, while its Institute of Technology is one of the most select colleges. The University's College of Agriculture, the Duluth branch, and the Morris branch, all fall within one or two points of the total mean.

Data for the college groups is shown in Table 6-5. The Private Liberal Arts Colleges have the highest mean HSR, with the Catholic Women's Colleges, the Catholic Men's Colleges, the over-all University group, the Junior Colleges and the State Colleges arranging themselves in that descending order.

The standard deviations follow the expected statistical reasoning. As a college has a mean HSR nearer to 100 (the limiting value on the upper end) the spread of HSR is curtailed and therefore the more select the college, the smaller the standard deviation. When the college mean HSR is near the total mean, the standard deviations are larger. In general, the liberal arts colleges have smaller, and the State and Junior Colleges larger HSR standard deviations. For individual colleges, standard deviations range from 12.0 to 29.1.

An important point to note with respect to HSR means and standard deviations is that all colleges and college groups are getting some of the more able students. This selectivity of students by HSR and MSAT ability level is more closely analyzed in other publications (Berdie and Swanson, 1962; Swanson, et al, 1963; Swanson, et al., 1965). In these reports it was shown that though the Private Liberal Arts Colleges and the University get more of the more able students, all colleges get some of them. Conversely, with respect to the less able students, most colleges and college groups also get some of them.

Differences on MSAT

Table 6-4 shows the MSAT means and standard deviations for the individual colleges. The reference point for MSAT, as for HSR, is the mean and standard deviation for the total group, 39.2 and 13.8 respectively. On MSAT, 78 is the highest possible score. For the individual colleges we find MSAT means ranging from 25.0 (University GC) to 65.3 (a Private Liberal Arts College). The pattern for MSAT means across colleges and groups of colleges is so similar to the pattern of HSR means that little further discussion is necessary. However, Table 6-1 presents an interesting way of looking at MSAT means for some of the colleges and college groups. This table shows how the means compare when referred to percentile ranks from a norms table for entering freshmen to Minnesota colleges.[2] Here we find a range of 33 (a public Junior College) to 97 (a public liberal arts college). All of the liberal arts colleges (including

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[2] These norms tables are based on 3401 entering freshmen to the University of Minnesota the fall of 1959. They constitute the official norms tables for reporting percentile ranks of MSAT scores in the Minnesota college State-Wide Testing Program.

Catholic) have means with percentile ranks above 50. The Junior and State College MSAT means mostly fall below the 50th percentile rank while the University's Institute of Technology and College of Liberal Arts are well above 50, the College of Agriculture right at 50, and the General College well below 50.

MSAT standard deviations are remarkably similar to each other across colleges. With only a few exceptions they fall within the 11-14 point range. The colleges with the highest and lowest MSAT means are the exceptions here, both having standard deviations well below 10.

The comment made about interpreting the HSR means and standard deviations across colleges with respect to what level of ability each college or college group is getting is apropos here. Though certain colleges and college groups are more selective than the others, each gets some of the high ability and each some of the low ability students.

Sex Differences

The entering freshmen to Minnesota colleges being covered in this report were tested with the MSAT during January and February of their junior year in high school (1959 to 1960). The high school ranks being used in this study were obtained for them at the end of their junior year of high school. For that group sex differences were found for HSR and MSAT as follows (Swanson, et al, 1961):

	HSR			MSAT		
Group	N	$\overline{X}$	SD	N	$\overline{X}$	SD
Males, 10% sample	2198	44.8	28.8	2315	29.8	13.8
Females, 10% sample	2221	55.9	27.8	2299	30.9	13.9
Total, 10% sample	4419	50.3	28.8	4614	30.3	13.9
Total, All High School Juniors, 1959-60		*	*	47,890	30.7	13.9

*HSR represents, with very minor variations because of State-Wide practices in computing it, a rectangular distribution. By definition then, the total population of juniors should have a HSR mean and standard deviation of 50 and 28.87 respectively. The total 10% sample was exceedingly close to these expected values.

Thus in the parent population on which the current study is dependent for HSR and MSAT scores, we find an 11.1 HSR mean difference and MSAT mean difference of 1.1 in favor of females.

With such a "base rate" from which to work and with the generally sizable numbers (N) being studied, it is entirely reasonable that the coeducational colleges in the current study will show similar differences between the sexes. This is largely true. HSR mean differences fluctuate around 11 points, some differences running as low as five points or as high as over twenty points. Most MSAT mean differences favor the women, though in four instances the men have higher mean MSAT scores. Disregarding situations with unusually small N's, MSAT mean differences between the sexes range from about -2 points to +5 points higher for the females.

Summary

Large differences exist on HSR and MSAT mean scores across the individual colleges and college groups. These differences reflect the admissions practices and educational philosophies of the various institutions. Though some colleges admit higher proportions of the more able students in terms of HSR and MSAT, they have some of the less able students. Conversely, some of the more able students are found in every college even though their mean HSR and MSAT scores are low. The difference between means of men and women in the individual colleges and college groups generally follows the pattern of these measures in the parent population from which the students in the study came.

References

Berdie, R. F., Layton, W. L., Hagenah, T., and Swanson, E. O. *Who Goes to College?* University of Minnesota Press: Minneapolis, 1962.

Swanson, E. O., Merwin, L. C., and Berdie, R. F. A Survey of Scholastic Aptitude in Minnesota Colleges. *Research Bulletin of the Office of the Dean of Students*, December, 1962, *4*, No. 2.

Chapter 6

STUDENT ACHIEVEMENT IN COLLEGE RELATED TO ABILITY LEVEL AND COLLEGE GRADING PRACTICES

This chapter is concerned with the relationship of student achievement in college to student ability level and college grading practices. The over-all purpose of the study was to examine some of the differences among various types of colleges in the personality characteristics and socioeconomic backgrounds of their students and to examine relationships and differences in relationships between these factors and grades among different colleges. We recognized that there would be large differences among the colleges in our study in the ability levels of their entering freshman classes and that the grades a student would be likely to achieve in a particular college would be related to his high school achievement (as measured by HSR) and his basic scholastic aptitude (as measured by MSAT). We therefore planned to statistically control level of achievement and ability when examining the relationships of personality and socioeconomic factors to academic achievement.

It became apparent that another important factor affecting a given student's scholastic achievement was the grading practices of the college in which he was enrolled. Large differences in the grading distributions of various colleges were found and these differences vitally affected the grades achieved by students in the different colleges. The principle purpose of this chapter, then, is to show some of the differences in student ability levels and in grading practices among all of the colleges of a particular state.

Ability and Grading Distributions

Differences in grading practices among the different types of colleges in Minnesota are shown in Table 6-1. The mean grade point average earned by Minnesota students in each of the types of colleges is shown in the third row of this table. The range of mean grade point averages achieved by these students at each of the individual colleges within each type is shown in the fourth row. These grade point averages are based on a four-point grading system in which F = 0, D = 1, C = 2, B = 3, and A = 4.[1] The mean grade point average achieved by these entering freshman classes ranges from 1.8 to 2.8. The first year grade point averages shown here are based on the entire freshman year grade point average if the student completed the first year. If he completed only one quarter or one semester, these grades were used in computing his freshman grade point average. For the Private Liberal Arts group, there is considerable range in mean grade point averages (2.0 to 2.6); for other groups, such as the State Colleges (1.9 to 2.2), the

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[1] A few colleges used a system with A = 3, B = 2, C = 1, and D and F = 0. For these colleges, GPA's were recalculated to the five point scale.

Table 6-1

Mean MSAT Percentiles and Means of Freshman Year GPA in Various Types of Minnesota Colleges

	University of Minnesota								
	Ag	IT	GC	SLA	Private Liberal Arts	Catholic Men's	Catholic Women's	Junior Colleges	State Colleges
Number of Colleges	1	1	1	1	8	3	4	10	5
Number of Freshmen	383	627	795	2422	1727	656	541	1355	2816
Mean First Year GPA	2.0	2.0	1.8	2.0	2.3	2.1	2.6	2.1	2.0
Standard Deviation	.77	.83	.68	.80	.71	.79	.62	.74	.75
Range	---	---	---	---	2.0-2.6	1.9-2.4	2.5-2.8	1.9-2.3	1.9-2.2
Percentile Rank of MSAT Mean Raw Score For Minnesota College Freshman Norms	50.5	71.5	17.6	67.1	69.1	61.0	68.3	43.7	38.6
Range Percentile of Mean MSAT Score	---	---	---	---	62-97	57-66	65-72	35-92	33-52

range is quite small.

Table 6-1 also includes the percentile of mean scholastic aptitude test scores from norms on entering freshmen in Minnesota colleges obtained by students in each type of college and the range of the mean percentiles for each individual college within each type of college. It can be seen that there is little relationship between the ability of students in a particular type of college and the mean grade point average they receive in that type of college. Students who enter the University's College of Liberal Arts, the Private Liberal Arts Colleges, and the Catholic Women's Colleges have a similar mean MSAT score. The data in this table show that we could expect the typical girl with an MSAT percentile rank of 68 to achieve a 2.0 in the University's College of Liberal Arts, a 2.3 in the typical Private Liberal Arts College, and a 2.6 in the typical Catholic Women's College. The typical student at a State College with an MSAT percentile of 38 gets the same grade point average--2.0--as does a student in the University's College of Liberal Arts with an MSAT score at the 67th percentile.

The standard deviation of grade point averages in the typical college is approximately .7. Since a 2.0 is passing, the difference in mean grade point average between 2.0 and 2.3 can be an extremely important one. At a school where the mean grade point average is 2.3, less than a third of the freshmen will receive below-passing grade point averages as compared with 50 per cent of the students at a college where the mean grade point average is 2.0 (assuming similarly shaped distributions).

Grades Received by Able Students

An example of the effect that varying levels of competition and varying grading practices can have upon the grades of relatively able students is shown in Tables 6-2 and 6-3. Table 6-2 shows the grade point averages obtained by students who achieved an MSAT raw score of 45 or above. This score places these students in the top 17 per cent of high school graduates on this test. Students scoring 45 or higher on this test fall among the top third in ability of college-bound students and would fall above the mean on almost all college campuses. The proportions of able students who receive less than 2.0 averages vary considerably among the different colleges. Higher percentages of able students get less than passing grades in the University's colleges than in any of the other types of colleges in the state. Forty per cent of the high-ability males receive below-passing grades at the colleges of the University compared with approximately 25 per cent at other types of colleges. Within the types of colleges, however, there is a wide range of differences. At one Catholic Men's College, for example, 37 per cent of such able Minnesota freshmen receive less than C averages as compared with 14 per cent at another. Less attention should be given to the range of percentages in the State and Junior Colleges for certain of these colleges contained only small numbers of high-ability students.

Similar differences appear when we examine the grade point averages of previously high-achieving students in Table 6-3. The students shown in Table 6-3 achieved high enough grades in high school to be included in the top 15 per cent (above the 85th percentile) of their high school graduating classes. Again, high-achieving students attending the University's Institute

Table 6-2

Percentage of High-Ability* Students Receiving Below-Passing Grade Point Averages in Minnesota Colleges

	University of Minnesota							
	Ag	IT	SLA	Private Liberal Arts	Catholic Men's	Catholic Women's	Junior Colleges	State Colleges
MALE								
% High-Ability Students Receiving GPA Below 2.00	40%	39%	35%	26%	27%		28%	26%
Range	--	--	--	5-36%	14-37%		10-43%	14-37%
Number of Students with MSAT Above 45	55	338	280	422	258		149	196
Total N	231	617	666	827	656		811	1472
FEMALE								
% High-Ability Students Receiving GPA Below 2.00	13%	11%	20%	11%		6%	13%	11%
Range	--	--	--	3-15%		0-10%	0-31%	4-14%
Number of Students with MSAT Above 45	55	9	524	495		276	158	341
Total N	152	10	1120	900		541	544	1344

*High-ability is defined as having an MSAT raw score of 45 or above. This places the student in the upper one fifth of high school graduates and the upper one third of college freshmen in Minnesota.

Table 6-3

Percentage of High-Achieving* Students Receiving Below-Passing Grade Point Averages in Minnesota Colleges

	University of Minnesota							
	Ag	IT	SLA	Private Liberal Arts	Catholic Men's	Catholic Women's	Junior Colleges	State Colleges
MALE								
% High-Achieving Students Receiving GPA Below 2.00	13%	31%	25%	13%	13%		7%	9%
Range	--	--	--	6-18%	8-18%		0-21%	0-15%
Number of Students with HSR 85+	46	326	218	325	181		124	152
Total N	231	617	666	826	657		861	1473
FEMALE								
% High-Achieving Students Receiving GPA Below 2.00	12%	20%	18%	9%		1%	4%	6%
Range	--	--	--	3-15%		0-4%	0-13%	0-9%
Number of Students with HSR 85+	57	10	518	523		222	178	397
Total N	152	10	1108	901		534	606	1341

*Graduated among the top 15% of their high school class of Technology or College of Liberal Arts have the highest percentages achieving less than passing grades. In this case, the proportions obtaining less than 2.0 averages in these two colleges of the University are twice the proportions of students in any of the other types of colleges. Again, the range of proportions within certain types of colleges varies considerably.

Still another approach to examining these differences is to take a student at a particular ability level and compute the grade point average he would typically receive at each college or type of college. This is accomplished by computing the means and standard deviations of MSAT scores and grade point averages at each of the types of colleges. It is then possible to take a student with a particular MSAT score and find where he would be placed on the MSAT distribution in a particular type of college. Then by taking that same point on the distribution of freshman grade point averages for that type of college, it is possible to compare grades a student at a particular level of ability might achieve at each type of institution.[2] This method makes the assumption that a perfect relationship or correlation exists between MSAT and grades when this very certainly is not the case. This approach is intended to be illustrative, not statistically correct, and to show how differences in grading practices and levels of competition affect students at particular levels of ability in particular types of colleges.

A student who falls at the 75th percentile for college-bound students on the scholastic aptitude test would be brighter than three out of four freshmen who attend college in Minnesota. In the University's Institute of Technology or College of Liberal Arts he would earn a just-passing C average (Table 6-4). At the average Private Liberal Arts College in the state, he would typically earn a C+, or 2.4 average, and at a State or Junior College, would earn a B-, or 2.8 average. If he were at the 50th percentile--of average ability for college-bound students in the state--he would be expected to fail out of the University's Institute of Technology or College of Liberal Arts with a 1.4 to 1.6 average. He would be placed on probation at the typical Private Liberal Arts College or Catholic Men's College with a 1.9 average and would earn almost a C+ average at a Catholic Women's College, a Junior College, or a State College.

Comparing Levels of Student Achievement Across Different Colleges

Thus far, the material reported in this chapter has shown that (1) the mean ability levels of entering 1961 freshman classes in the 40 different colleges in Minnesota varied considerably; (2) the mean grade point averages achieved during the first year by these entering freshman classes also varied considerably; and (3) there was little relationship among the colleges between ability level of their freshman classes and the mean grade point average achieved by those classes. Therefore, the grade point average achieved by a particular student in a different college was in part due to the extent to which his ability compared with that of the other students in his freshman

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[2] Many readers will recognize we are simply talking about the standard score, i.e., the number of standard deviation units from the mean of the group.

Table 6-4

MSAT Means for Minnesota Freshmen in Each College

	Male	Female	Total	Total Z-Score
	%ile	%ile	%ile	
University of Minnesota				
Agriculture	46	57	52	-.12
Education	35	52	46	-.26
General College	18	18	18	-1.03
IT	71	93	73	+.53
SLA	66	68	68	+.39
Morris	49	57	52	-.09
Private Liberal Arts				
A	73	78	77	+.66
B	64	61	61	+.22
C	57	61	59	+.15
D	57	64	59	+.16
E	64	66	66	+.33
F	96	98	96	+1.90
G	77	86	81	+.94
H	73	68	71	+.47
Total				+.51
Catholic Women's				
A	--	64	64	+.31
B	--	73	73	+.54
C	--	64	64	+.31
D	--	66	66	+.36
Total				+.43
Catholic Men's				
A	66	--	66	+.36
B	57	--	57	+.07
C	64	--	64	+.30
Total				+.19
Junior Colleges				
A	46	59	52	-.08
B	38	35	35	-.49
C	43	49	46	-.26
D	40	43	43	-.32
E	43	52	46	-.22
F	35	46	40	-.39
G	46	52	46	-.20
H	43	52	46	-.20
I	61	59	59	+.17
J	32	35	32	-.56
K	35	43	38	-.42
Total				-.26
State Colleges				
A	32	43	38	-.45
B	35	46	40	-.39
C	30	43	35	-.51
D	32	43	38	-.46
E	38	49	40	-.35
Total				-.42

MSAT
Mean = 39.2 = 54th Percentile
SD = 13.8, for all freshmen entering Minnesota colleges, fall, 1961

class and was also considerably affected by the particular grading distribution of that college. The remainder of this chapter describes a method designed to account for each of these factors in obtaining an index which can be applied to any college to predict how the average student in that college would achieve in any other college.

The mean MSAT score was computed for both the males and the females in each of the individual colleges in the state as shown in Table 6-4. It should be emphasized here that these studies are based on Minnesota students who attend Minnesota colleges. Therefore in several of the private colleges which attract large numbers of out-of-state students, this data may not be very representative of the entire 1961 freshman class. MSAT is a verbal aptitude test, and girls tend to do a little better on this test than do boys. Therefore, in the typical college, the girls come out a few percentile points higher than the boys.[3] In certain colleges in the state larger differences occur. In Table 6-4, Private Liberal Arts College G has a mean score for girls higher than would be expected. This college appears to attract somewhat brighter girls than boys, while the reverse is true for Private Liberal Arts College H which appears to attract abler boys than girls. All of the State Colleges attract considerably abler girls than boys as shown in the lower right-hand corner of Table 6-4 in which the girls at these colleges average 10 to 15 percentile points higher than do the boys.

The mean and standard deviation for the entire state-wide population of entering Minnesota college freshmen was computed and is also shown in Table 6-4. The mean for the students in this study fell at the 54th percentile among Minnesota college-bound students rather than at the 50th. One reason for this may be that this study includes only those entering-college freshmen who graduated from high school the previous spring. It does not include those who stayed out of school for a year or more before entering college. Such students may, on the average, be somewhat less able than those who go immediately to college. Another reason may be an actual shift upward in MSAT scores of Minnesota juniors which, when referred to the original norm group established for 1959 entering freshmen, may give a higher percentile.

The distance above or below the state-wide mean that each individual college fell was computed. This distance was measured in terms of a z-score computed according to the following formula:

$$\frac{\text{College Mean - Total State-Wide Mean}}{\text{Standard Deviation of Total Freshman Mean}}$$

For example, in Table 6-4, Private Liberal Arts College G, with a mean MSAT percentile of 81, fell almost a full standard deviation (+.94) above the mean, while the University's General College fell one standard deviation (-1.03) below the mean.

Similar means and standard deviations were computed for high school percentile ranks as shown in Table 6-5. In high school girls get considerably better grades than boys. For the 1959-60 high school juniors, the mean high school percentile rank for girls was 56 while the mean for all boys was 45. Therefore looking at the mean percentile ranks for ten different colleges, the mean for girls should be approximately 11 percentile points higher than that for the boys. Again, considerable range between the sexes is found among the different colleges and again there is a large difference in the State Colleges where the girls have mean percentiles approximately 20 percentile points above the boys. This table also shows the wide range of mean high school percentile ranks for entering freshmen among the different colleges in the state--from the 34th to the 93rd percentiles.

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[3] For the entire Minnesota high school junior class of 1959-60 from which the bulk of these 1961 Minnesota freshmen came, the average MSAT score for boys was 29.8 and for girls 30.9, a mean difference of 1.1. This corresponds to a 3.3-point difference in percentile rank.

The mean grade point average obtained by all Minnesota freshmen in all Minnesota colleges and the standard deviation of this distribution was computed and the result is shown on the bottom of Table 6-6. This mean grade point average is 2.09 which means that almost one half of the entering-college freshmen in Minnesota receive a less-than-passing 2.0 grade point average for their first year in college. The mean grade point average achieved by both the males and females are shown for each of the colleges in the state and the distance above or below the over-all state-wide mean is shown in z-score units. This table again shows the wide range of mean grade point averages achieved by entering freshman classes--from 1.8 to 2.8.

A "Difficulty Index" for Each College

If we know the distribution of the ability levels of all college freshmen in the state and the distribution of grades, the mean of a particular college on the distribution of ability can be compared with its mean on grade point average. A college in which the mean ability level of its entering freshman class was above the state-wide college freshman mean but whose grading distribution gave a mean grade point average below the state-wide freshman mean would be more difficult for a particular student than the typical, or average, college in the state. It is therefore possible to take the z-score of the mean ability level for a given college and subtract it from the z-score of the mean grade point average at that college which results in a difference which would give a "difficulty index" for each college. A college whose mean on the MSAT for its entering freshman class fell a half a standard deviation above the mean for the state-wide population of entering freshmen, but whose mean freshman grade point average fell exactly at the mean for all students, would result in a difference in z-scores of -.5. A student attending a college with an entering freshman class whose mean ability level fell a quarter of a standard deviation below the state-wide mean, but whose mean grade point average fell a tenth of a standard deviation above the state-wide mean, would find it easier to obtain a particular grade point average than at the average Minnesota college, and for this college the difference in z-scores would be +.35. Colleges with minus z-scores were therefore more difficult institutions than the average institutions and colleges with positive z-scores less difficult.

Z-score differences were computed for both high school rank and MSAT score for each college. Since the pattern of achievement varies between the sexes, these differences were originally computed separately for each sex but, for purposes of this study, these scores were combined according to the

Table 6-5

HSR Means for Minnesota Freshmen in Each College

	Male %ile	Female %ile	Total %ile	Total Z-Score
University of Minnesota				
Agriculture	64	76	69	+.06
Education	67	75	72	+.21
General College	34	35	34	-1.35
IT	81	97	82	+.59
SLA	71	79	75	+.33
Morris	64	79	70	+.10
Private Liberal Arts				
A	77	88	82	+.62
B	70	81	76	+.34
C	68	80	74	+.27
D	70	82	76	+.37
E	75	80	78	+.43
F	90	98	93	+1.06
G	81	90	86	+.77
H	78	83	80	+.54
Total				+.52
Catholic Women's				
A	--	76	76	+.36
B	--	75	75	+.33
C	--	79	79	+.48
D	--	75	75	+.32
Total				+.36
Catholic Men's				
A	75	--	75	+.35
B	61	--	61	-.25
C	70	--	70	+.12
Total				+.00
Junior Colleges				
A	56	67	61	-.24
B	55	65	59	-.31
C	50	69	55	-.51
D	58	68	61	-.24
E	47	74	59	-.35
F	55	69	62	-.22
G	57	68	61	-.26
H	55	69	61	-.24
I	62	79	71	+.14
J	54	66	57	-.41
K	51	65	57	-.39
Total				-.26
State Colleges				
A	53	70	61	-.24
B	50	66	58	-.38
C	50	70	59	-.32
D	47	66	56	-.44
E	56	74	64	-.14
Total				-.31

HSR
Mean = 67.15
SD = 24.24

Table 6-6

GPA Means for Minnesota Freshmen in Each College

	Male	Female	Total	Total Z-Score
University of Minnesota				
Agriculture	1.90	2.23	2.03	-.08
Education	1.89	1.97	1.94	-.19
General College	1.81	1.75	1.79	-.38
IT	1.97	2.70	1.98	-.14
SLA	1.93	2.12	2.03	-.08
Morris	1.80	2.27	1.98	-.14
Private Liberal Arts				
A	2.23	2.46	2.35	+.33
B	1.77	2.24	2.00	-.12
C	2.08	2.30	2.19	+.13
D	2.24	2.54	2.40	+.40
E	2.23	2.31	2.27	+.23
F	2.52	2.76	2.62	+.68
G	2.26	2.68	2.48	+.50
H	2.15	2.30	2.23	+.18
Total				+.29
Catholic Women's				
A	--	2.78	2.78	+.88
B	--	2.54	2.54	+.58
C	--	2.51	2.51	+.54
D	--	2.49	2.49	+.51
Total				+.59
Catholic Men's				
A	2.35	--	2.35	+.33
B	1.86	--	1.86	-.29
C	2.29	--	2.29	+.26
Total				-.02
Junior Colleges				
A	2.10	2.41	2.24	+.19
B	1.91	2.55	2.20	+.14
C	2.01	2.30	2.10	+.01
D	1.75	2.15	1.89	-.26
E	1.74	2.26	1.96	-.17
F	2.07	2.53	2.28	+.24
G	1.91	2.63	2.15	+.08
H	1.89	2.16	2.00	-.12
I	2.45	2.54	2.50	+.53
J	2.00	2.35	2.08	-.01
K	1.97	2.44	2.17	+.10
Total				+.07
State Colleges				
A	1.83	2.08	1.95	-.18
B	1.87	2.31	2.08	-.01
C	1.86	2.22	2.03	-.08
D	2.06	2.30	2.17	+.10
E	1.86	2.22	2.01	-.10
Total				-.07

GPA
Mean = 2.09
SD = .78

ratio of students of each sex in each college. This then resulted in two indices, one based on high school rank and one on MSAT score. In regression equations utilizing high school rank and MSAT to predict college grades, there was considerable range among the colleges in the state in the different weights assigned to each of these variables. In the typical college, high school rank received a weight approximately twice that for MSAT score; therefore, in combining these two variables to obtain a single z-score difference for each college, the differences for each of these variables were combined in a 2:1 ratio. This resulting proportioned z-score difference was then used as a single "difficulty index" for each of the colleges. The resulting z-score differences are shown for each of the colleges in Minnesota in Table 6-7. These z-score differences are shown in the left-hand column of figures in this table. The shapes of the distributions of grades, and therefore the standard deviations, were quite similar in all the colleges. Even though the means varied, it was possible to convert this z-score difference into an estimate of actual grade point difference by measuring the distance above or below the mean in the total state-wide distribution represented by the z-score difference. These grade point differences are shown in the right-hand column of figures in this table. This right-hand column reads in this way: A student who attends Private Liberal Arts College A could, on the average, expect to obtain a freshman year grade point average .23 of a grade point below that which he would receive in the "average" college in Minnesota. A student attending Range Junior College G could expect to receive a grade point average .25 of a grade point above that which he would receive in the "average" college. There is a difference of over a full grade point (1.22) between the college at the top of the list and that at the bottom.

In going in rough order from top to bottom, realizing that there are a number of exceptions in this ranking, it is seen that the University's Institute of Technology and College of Liberal Arts give the lowest grades to the ablest students. They are followed by most of the Private Liberal Arts Colleges in the state and below that come several other colleges at the University and the Catholic Men's Colleges. This latter group falls at about the mean for the state and, on the other side of the mean, such general groupings do not occur but instead the State Colleges, Catholic Women's Colleges, and Junior Colleges are found throughout the remainder of the colleges having positive z-score differences. At the bottom is the University's General College--a junior college which takes only those students who are not admissable to other colleges within the University. Students who receive considerably above-average grades in this college are allowed to transfer into other colleges of the University. The reason for the large number of colleges with positive z-score differences as compared with those with negative differences is that the University's College of Liberal Arts and Institute of Technology include over 3000 freshmen so that these two colleges weigh very heavily on the minus side of the mean.

A Validity Study of the College Difficulty Index

If the resulting difficulty indices are correct, the differences shown here among the various colleges should be reflected in the grades earned by a student transferring among them. For example, the average student transferring from Private Liberal Arts College B (-.33) to State College E (+.09) should find his grade point average rises .42 of a grade point.

Table 6-7

Differences Expressed in Z-Score Units Between Mean Ability (Weighted HSR-MSAT, 2:1) and Mean Grade Point Average for Minnesota Freshmen in Various Minnesota Colleges

College	Z-Score Difference	Grade Point Difference from Mean of 2.09	College (cont.)	Z-Score Difference	Grade Point Difference from Mean of 2.09
U of M, Institute of Technology	-.71	-.55	Catholic Men's College (A)	-.02	-.02
Private Liberal Arts (F)	-.66	-.51	Junior College (D)	+.01	+.01
U of M, SLA	-.43	-.34	Catholic Men's College (C)	+.08	+.06
Private Liberal Arts (B)	-.42	-.33	Private Liberal Arts (D)	+.10	+.08
Private Liberal Arts (H)	-.34	-.27	State College (E)	+.11	+.09
Private Liberal Arts (G)	-.33	-.26	Junior College (H)	+.11	+.09
Private Liberal Arts (A)	-.30	-.23	Catholic Women's College (C)	+.12	+.09
U of M, Education	-.24	-.19	State College (A)	+.13	+.10
U of M, Morris	-.18	-.14	Range Junior College (E)	+.14	+.11
Private Liberal Arts (E)	-.17	-.13	Catholic Women's College (D)	+.18	+.14
Catholic Men's College (B)	-.15	-.12	Catholic Women's College (B)	+.18	+.14
Private Liberal Arts (C)	-.10	-.08	State College (C)	+.30	+.23
U of M, Agriculture	-.08	-.06	Range Junior College (G)	+.32	+.25
U of M, Duluth	-.04	-.03	State College (B)	+.37	+.29

(Table 6-7 Continued)

College	Z-Score Difference	Grade Point Difference from Mean of 2.09	College (cont.)	Z-Score Difference	Grade Point Difference from Mean of 2.09
Private Junior College (I)	+.38	+.30	Junior College (B)	+.51	+.40
Range Junior College (A)	+.38	+.30	Range Junior College (F)	+.52	+.41
Range Junior College (C)	+.44	+.34	Catholic Women's College (A)	+.54	+.42
Junior College (J)	+.45	+.35	State College (D)	+.55	+.43
Junior College (K)	+.50	+.39	U of M, General College	+.86	+.67

HSR
Mean = 67.15
SD = 24.24

MSAT
Mean = 39.2 = 54th Percentile
SD = 13.8

GPA
Mean = 2.09
SD = .78

A student who attends Range Junior College A (+.30) who transfers to the University of Minnesota, Duluth branch (-.03), should expect his grade point average to drop .33 of a grade point. To examine the validity of these predictions it is necessary to examine the grades earned by transfer students who begin in one college and transfer to another. In most cases there are not enough students transferring from one college to another to conduct such a study except over a long period of time of gathering data. The one college in the state that does receive many transfer students from other colleges each year is the University's College of Liberal Arts. It was therefore possible to study the students who entered the College of Liberal Arts from different schools, predict their mean grade point average on the basis of this index and then examine the grades they actually received.

Information regarding the grades received by transfer students was obtained from the University's Office of Admissions and Records for the students who transferred into the lower division (first two years) of the College of Liberal Arts during the academic year 1963-64. In the majority of cases these were students who attended another college for approximately one year before transferring to the University. Therefore most of the transfer students were not 1961 graduates, on whom the original study was conducted, although a few of these students were included in the transfer group. The mean grade point average obtained during the entire time in the previous college was compared with the mean grade point average obtained during the first year in the College of Liberal Arts. If in June of 1964 the student had attended the University for less than a full year, grades earned during the quarters in which he was in attendance were used.

The results of this study are shown in Table 6-8. In this table is shown the mean grade point average achieved by students in the previous college and the grade point average achieved in the College of Liberal Arts at the University of Minnesota. Within each type of college, the two colleges with the largest number of students who transferred to the University are shown except for the Catholic Women's Colleges. In this case a large enough number of students transferred from only one college. It can be seen in Table 6-8 that the 50 students transferring from State College B received a 2.47 average in that college. In the College of Liberal Arts they obtained a 1.94 grade point average. In Table 6-7 it is seen that State College B has a difficulty index of +.29 while at the University's College of Liberal Arts it is -.34. Therefore the average transfer student's grade point average should drop .63. It is seen in Table 6-8 that the actual drop was .53. Similar data is shown for State College A in which the predicted difference was -.44 and the actual difference was -.46.

In each of the colleges studied the actual grade point average achieved was very close to that predicted from the difficulty indices except for the Catholic Men's Colleges. In Table 6-8 the grade point average for the 20 students transferring from Catholic Men's College A was predicted to drop .32 but instead dropped .79. On the other hand the 41 students transferring from Catholic Men's College B were predicted to drop .22 of a grade point and the actual difference was a drop of only .04 of a grade point. With this exception the results shown in this table indicate that the difficulty index constructed by the use of z-score differences do reflect very accurately the difference in levels of student achievement obtained by transfer students.

Table 6-8

Summary of Transfers from Minnesota Colleges to CLA Lower Division 1963-64

Office of Admissions and Records

University of Minnesota

College	Number of Students	Previous GPA Last College	U of M CLA(LD) GPA First Year	Predicted Difference	Actual Difference
All State Colleges	134	2.41	1.89	----	-.52
State College B	40-50	2.47	1.94	-.63	-.53
State College A	40-50	2.29	1.83	-.44	-.46
All Junior Colleges	57	2.52	2.09	----	-.43
Junior College H	10-20	2.54	2.17	-.43	-.37
Junior College D	10-20	2.49	1.94	-.35	-.55
All Private Colleges	266	2.43	2.26	----	-.17
Private Liberal Arts G	20-40	2.59	2.51	-.08	-.08
Private Liberal Arts A	20-40	2.65	2.52	-.11	-.13
Catholic Men's College A	20-40	2.46	1.67	-.32	-.79
Catholic Men's College B	20-40	2.17	2.13	-.22	-.04
Catholic Women's College B	10-20	2.84	2.41	-.48	-.43
Total All Minnesota Colleges	459	2.44	2.14	----	-.30

This table showing lower grade point averages for students from most colleges indicate that what has become known as "transfer shock" experienced by students transferring from state and junior colleges to state universities in states such as California (Knoell, 1964) and Georgia (Hills, 1964) also exists in Minnesota.

Summary

The results of this portion of the study indicate that a particular level of achievement is rewarded with lower grades in some colleges than in others. It appears that the lowest grades for a particular level of achievement are obtained in the University's Institute of Technology and College of Liberal Arts than are obtained in most other colleges in the state. At these two colleges, with relatively able student bodies, the mean freshman grade point average received is 2.0. Since a 2.0 is needed for graduation, approximately half of the students therefore receive either a failing or at least a not very encouraging grade point average during their freshman year. Roughly similar distributions of grades are given in the state and junior colleges where the mean ability levels of the student bodies are considerably lower. The typical private college has an entering freshman class with an ability level similar to that of those entering the Institute of Technology and the College of Liberal Arts of the University; however, mean grade point averages received by these freshman classes in these institutions tend to be in the vicinity of 2.2 to 2.5.

It can be argued that students earn the grades they receive and the differences presented here are actually due to the fact that students in one college with a similar ability level but higher mean grade point average have actually learned a good deal more as indicated by their higher grades. The information given on the transfer students would tend to refute this, however. An achievement test given to students in each of the colleges, for example, during the sophomore and senior years, would help to answer some of these questions. In this way, the "input" data of the type studied here could be compared with the "output" data across the different colleges.

This study has shown that the ability levels and the grading distributions differ considerably among different colleges and types of colleges, and that therefore a particular grade point average represents different levels of academic achievement in different colleges. A statistical procedure has been described which takes these factors into consideration and yields a "difficulty index" for each college. This index shows the size of the difference in levels of academic achievement among the different colleges.

References

Hills, John. Transfer Shock. Regents of the State University of Georgia Newsletter, Atlanta, Georgia, October, 1964.

Knoell, Dorothy M. A Study of the Factors Affecting the Performance of Transfer Students from Junior Colleges. Paper presented at California Junior College Association meeting, San Diego, California, October 30, 1964.

Chapter 7

DIFFERENCES IN SOCIOECONOMIC BACKGROUNDS OF STUDENTS WHO ATTEND DIFFERENT TYPES OF COLLEGES

A questionnaire which the students filled out in high school included many items dealing with family, socioeconomic, and cultural backgrounds. These items included father's occupation, education of both parents, descriptive categories regarding family income, family attitudes toward college attendance and contribution to college expenses, numbers and types of books and magazines in the home, and parental membership in various organizations. It was therefore possible to compare students attending each of the colleges and each of the types of college on these variables.

Occupation of Father

The students were asked to check one of seven categories describing their fathers' occupations. These were: profession, owns or manages business, office work, sales, owns or manages farm, skilled tradesman, or factory worker. In the cases where they could not readily classify their fathers' occupations, they were asked to check "other" and to write in the name of the "other" occupation. Where possible the coders classified the "other" occupation into one of the seven categories above; otherwise it was either left coded "other" or further classified into "retired," "unemployed," etc.

The proportion of students whose fathers were in each of the different occupational classifications are compared according to different types of colleges in Table 7-1. The data in this table show that, while there are differences in fathers' occupations among the types of colleges, these differences are not as great as many people might expect. The more expensive Private Liberal Arts Colleges do not attract almost exclusively students from professional or managerial homes, nor are the student populations in the Junior Colleges made up primarily of students from the lower occupational levels. While Private Liberal Arts Colleges do have more students from professional families than do the Junior or State Colleges and fewer students from laborer homes, there is a wide distribution of occupational backgrounds in all types of colleges. Furthermore, this distribution exists not only within the over-all types of colleges, but also within each of the individual colleges in each of the groups, as shown in the breakdown on this variable for each of the individual colleges in Appendix B. Even the most expensive colleges apparently have enough scholarships and financial aid available to insure their attracting students from the lower occupational levels.

At the University's College of Agriculture, 36 per cent of the students are from farms. Though this is far and away the largest single percentage entry for any college or group in Table 7-1, it is clear that this college also attracts many students from other than farm backgrounds. The percentage

Table 7-1

A Comparison of Types of Minnesota Colleges by Occupation of Students' Fathers

	University of Minnesota							
Father's Occupation	Ag %	IT %	SLA %	Priv L. A. %	Cath M. %	Cath. F. %	Junior %	State %
Profession	9	13	15	20	14	12	5	7
Owns or Manages Business	12	16	19	18	22	22	12	18
Office Work	6	8	10	7	11	7	5	4
Sales	6	8	11	8	9	10	4	7
Owns or Manages Farm	36	12	5	16	9	12	13	22
Skilled Tradesman	14	22	21	13	16	16	23	17
Factory Worker	7	10	8	6	9	8	24	10
Other	11	11	12	12	10	13	14	14
Total	101	100	101	100	100	100	100	99
N	378	614	2381	1715	647	524	1432	2770
Z-Score of Mean on College Freshman Distribution	-.13*	.00	+.16*	+.27*	+.18*	+.15*	-.40*	-.11*
Range of Z-Scores				-.08 to +.70	+.16 to +.26	-.20 to +.20	-.77 to -.11	-.15 to -.07

Total Mean = 4.073 Total Standard Deviation = 2.044 Total N = 10,663

*Significantly different from state-wide college freshman mean at beyond .05 level entry of 36 is for both sexes. Actually the boys in this college are concentrated in agriculture and forestry and 50 per cent of them are from farms. The girls are concentrated in home economics where 25 per cent are from farms.

It is popularly assumed that engineering is very likely to attract students from families of skilled tradesmen. When the percentages of students with fathers who are skilled tradesmen are compared for the University's Institute of Technology and College of Liberal Arts, it is seen that such is not the case. The proportions of students from all types of backgrounds are essentially the same for both the Institute of Technology and the College of Liberal Arts with the exception of the proportion of farm students in the College of Liberal Arts. There is a smaller proportion of farm students in the University's College of Liberal Arts than in any other college or type of college. Apparently when students from farm backgrounds go to liberal arts colleges, they are more likely to attend smaller colleges, either public or private, than they are the large, metropolitan University of Minnesota. It may also reflect the position of the University's College of Liberal Arts as a "commuter college" in a large metropolitan area where there is virtually no farm area available from which to draw students. The higher percentage of students from laboring backgrounds at the Junior Colleges is due to the location of over half of the Junior Colleges in the cities of Minnesota's iron range. A substantial proportion of the students in these iron range Junior Colleges come from families where the father is or was a worker in the iron mines.

At the bottom of Table 7-1 are shown the z-scores of the students in each type of college compared with the over-all college freshman distribution. Each of the types of occupations was ranked from 1 to 7 in the order shown on the table ("other" was not included) and the mean and standard deviation of the total college freshman population and the means for each college or type of college were found. The means for each of the individual colleges and types of colleges were then determined in terms of z-scores (standard deviation units) on this total college distribution.* Students at Private Liberal Arts Colleges with a z-score of +.27 fell almost a third of a standard deviation above the over-all college mean. Students at the University's Institute of Technology fell exactly at the mean, while students in the Junior Colleges fell 0.4 of a standard deviation below the mean. The range of scores within each of the type of college groups is also shown. Though all colleges enroll some students from families of every occupational level, it is apparent there is considerable "selectivity" across the colleges as to where the majority of the students come from.

Parental Education

The high school seniors were asked to check the highest educational level attained by each of their parents. The educational classifications ranged from "did not attend school" and "some grade school" through "graduated from college" and "holds more than one college degree." The proportion of students checking each of the educational levels attained by

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$$* \quad \frac{\text{College Mean - Total Freshman Mean}}{\text{Standard Deviation of Total Freshman Mean}}$$

their fathers are shown in Table 7-2. It can be seen in this table that, although there are differences among the types of colleges in fathers' educational levels, all types of colleges have substantial proportions of students whose fathers have no more than an eighth grade education and, on the other hand, substantial proportions with fathers who have had some college training. These figures show that in the liberal arts colleges in the state, whether the University's, private, or Catholic, approximately 20 per cent of the students come from homes where the father has had no more than an eighth grade education and approximately a third come from homes where the father has had some type of college training.

By ranking the fathers' educational levels 1 to 9, means and standard deviations for the total group and for each college and type of college were determined and z-scores calculated as was done for fathers' occupations. When the z-scores in Table 7-2 are compared to those in Table 7-1 for father's occupation, we see that each type of college ranks in approximately the same place on each of these variables. The lone exception appears to be the State Colleges which are much farther below the mean on education of father than on father's occupation.

The comparison of the different types of colleges by education of the students' mothers is shown in Table 7-3. In this table, it can be seen that the differences among the students in different colleges in level of mother's education are slightly smaller than those in the previous table for father's education. That is, the individual colleges and types of colleges do not deviate as much from the total group mean as they did for father's education. One exception appears for the Private Liberal Arts Colleges where we find the mothers had more education beyond high school than did mothers of students in any other college or type of college. If a student's mother has had some college training, the student is more likely to attend a smaller private liberal arts college than he is to attend the University's College of Liberal Arts--a difference which did not occur in regard to father's education. Again it is seen in this table that all types of colleges attract students from families at all educational levels.

Source of Family Income

One of the items on the questionnaire asked: "Which of the following ways best describes how your family gets its income? (Check the one phrase which best applies):

(1)_____Professional fees or business profits (Including profits from farms)

(2)_____Fixed salary (Paid on a monthly or yearly basis)

(3)_____Wages (Paid on an hourly or daily basis and depending on number of hours worked)

(4)_____Income from investments (Stocks, bonds, real estate, insurance)

(5)_____Pensions (Government or other)"

Table 7-2

A Comparison of Types of Minnesota Colleges by Education of Students' Fathers

	University of Minnesota							
Level of Education	Ag %	IT %	SLA %	Priv L. A. %	Cath M. %	Cath F. %	Junior %	State %
Did Not Attend	--	--	--	--	--	--	--	--
Some Grade School	2	1	2	2	2	4	4	4
Completed Eighth Grade	25	20	13	17	16	20	28	31
Some High School	13	12	11	9	10	10	16	13
Graduated from High School	24	27	26	22	27	24	25	25
Business or Trade School	12	9	11	11	8	10	7	9
Some College	8	11	14	13	14	13	9	7
Graduated from College	13	16	17	16	17	13	9	8
More than One College Degree	3	4	7	10	6	7	2	3
Total	100	100	101	100	100	101	100	100
N	382	623	2391	1720	654	529	1444	2781
Z-Score of Mean on College Freshman Distribution	-.12	+.04	+.23	+.24	+.18	+.05	-.31	-.33
Range of Z-Scores				-.21 to +.94	-.12 to +.22	-.38 to +.27	-.47 to -.01	-.55 to -.25

Total Mean = 5.336 Total Standard Deviation = 1.921 Total N = 12,266 (includes Ed., G. C., U. M. D., and Morris)

Table 7-3

A Comparison of Types of Minnesota Colleges by Education of Students' Mothers

Level of Education	University of Minnesota Ag %	 IT %	 SLA %	Priv L. A. %	Cath M. %	Cath F. %	Junior %	State %
Did Not Attend	--	--	--	--	--	--	--	--
Some Grade School	1	1	1	--	1	2	2	1
Completed Eighth Grade	14	12	8	9	11	13	15	19
Some High School	8	9	9	6	9	9	15	12
Graduated from High School	35	43	42	29	38	32	39	35
Business or Trade School	13	8	11	13	8	13	6	8
Some College	18	15	15	21	16	18	12	16
Graduated from College	12	12	13	20	14	13	11	9
More than One College Degree	--	1	2	2	2	1	1	1
Total	101	101	101	100	99	101	101	101
N	381	621	2397	1726	651	538	1447	2786
Z-Score of Mean on College Freshman Distribution	+.03	-.01	+.09	+.32	+.08	+.05	-.18	-.17
Range of Z-Scores				-.06 to +.96	+.06 to +.12	-.23 to +.20	-.34 to -.03	-.26 to -.13

Total Mean = 5.442 Total Standard Deviation = 1.586 Total N = 12,304 (includes Ed., G. C., U. M. D., and Morris)

Proportions of students checking each category are shown separately for males and females for each of the types of colleges in Table 7-4. There appear to be very large differences here. However, differences in proportions of students checking the first category--professional fees or business profits--cannot be particularly meaningful as they reflect both the number of students from professional families and from farm families in each of the types of colleges. Furthermore, the percentages of students coming from the families of wage-earners (ranging from 20 per cent of students in Private Liberal Arts Colleges to over 40 per cent of students in Junior Colleges) may merely reflect the large number of the Junior Colleges in iron-mining towns of Minnesota and the large proportion of students from wage-earning families of these towns. Proportions of students checking each of the income categories are shown for each of the individual colleges in Appendix B.

Adequacy of Family Income

The students were asked to check one of a set of phrases which best described their family income ranging from "frequently have difficulty making ends meet" to "have all the necessities but not many luxuries" to "wealthy." The proportions of students in each of the types of colleges checking each of the categories are shown in Table 7-5. Here again the students' descriptions of their family incomes did not vary greatly among the different types of colleges with the exception of students in Junior and State Colleges who checked somewhat more frequently the categories indicating less adequate family incomes.

Family Help with College Expenses

The students were asked to what extent their families would help them meet college expenses during the coming year. They checked whether their families would pay all, most, some, or none of their expenses. Proportions checking each of the categories are shown separately by sex for each of the types of colleges in Table 7-6. In each of the different types of colleges, the girls expect considerably more family help in meeting the cost of college than do the boys, and these differences are quite consistent for each of the types of colleges. In each of the colleges 6 to 10 per cent of the boys expect their parents will pay all of their expenses in college as compared with 15 to 20 per cent of the girls. On the other hand, 10 to 15 per cent of the boys in each of the types of colleges expect to receive no help from their parents as compared with 4 to 10 per cent of the girls. The cost of attending each of the different types of colleges will vary widely for these students. At the Junior Colleges, most of the students will be living at home and commuting, and tuition costs at the Junior Colleges are quite low, in the vicinity of $200 per year. At the Private Liberal Arts Colleges, most of the students will be living on the campus and their total expenses will be $2000 to $3000 per year. Costs at the other types of colleges will range between these two extremes. With this very large range in total college costs, it is interesting to notice that the proportion of family help expected at each of the different types of colleges is almost the same for all types of colleges. For example, the proportion of boys checking the phrase "pay some

Table 7-4

A Comparison of Types of Minnesota Colleges by Source of Family Income

Source of Income	University of Minnesota Ag %	IT %	SLA %	Priv L. A. %	Cath M. %	Cath F. %	Junior %	State %
MALE								
Fees or Fixed Profits	54	26	25	35	36		24	40
Fixed Salary	22	34	40	42	34		32	30
Wages	22	36	32	21	28		42	26
Investments	1	1	1	1	2		1	2
Pensions	--	3	2	1	1		2	3
Total	99	100	100	100	101		101	101
FEMALE								
Fees or Fixed Profits	45	11	23	39		35	24	42
Fixed Salary	31	67	40	40		33	30	30
Wages	23	22	34	19		28	42	25
Investments	--	--	1	1		1	1	1
Pensions	1	--	2	1		3	3	3
Total	100	100	100	100		100	100	101
Male N	223	589	1146	789	629		829	1414
Female N	146	9	1177	851		521	578	1256

Table 7-5

A Comparison of Types of Minnesota Colleges by Reported Family Income Status

	University of Minnesota							
				Priv	Cath	Cath		
	Ag	IT	SLA	L. A.	M.	F.	Junior	State
Family Income	%	%	%	%	%	%	%	%
MALE								
Frequent Difficulty	4	2	2	2	2		3	3
Some Difficulty	4	3	3	2	3		4	4
Necessities Only	23	24	19	20	21		25	25
Comfortable	61	64	65	65	60		63	60
Well-to-Do and Wealthy	9	7	11	11	15		6	8
Total	101	100	100	100	101		101	100
FEMALE								
Frequent Difficulty	3	20	3	2		4	3	5
Some Difficulty	5	10	3	1		2	4	3
Necessities Only	16	20	17	15		19	24	21
Comfortable	68	50	68	72		68	66	67
Well-to-Do and Wealthy	8	--	9	10		8	3	4
Total	100	100	100	100		101	100	100
Male N	231	616	1186	822	653		858	1466
Female N	152	10	1219	899		541	602	1342

Table 7-6

A Comparison of Types of Minnesota Colleges
by Reported Extent of Expected Family Help with College Expenses

	University of Minnesota								
Extent of Help	Ag %	GC %	IT %	SLA %	Priv L. A. %	Cath M. %	Cath F. %	Junior %	State %
MALE									
Pay All Expenses	5	9	6	8	8	9		8	6
Pay Most of Expenses	34	27	25	27	31	28		32	29
Pay Some of Expenses	50	48	53	50	50	49		46	50
Pay None of Expenses	12	16	17	15	11	14		14	14
Total	101	100	101	100	100	100		100	99
FEMALE									
Pay All Expenses	13	29	--	16	20		18	23	15
Pay Most of Expenses	37	37	33	33	43		36	35	34
Pay Some of Expenses	41	30	56	41	33		39	34	41
Pay None of Expenses	8	4	11	10	4		7	8	10
Total	99	100	100	100	100		100	100	100
Male N	191	427	594	1104	803	625		736	1180
Female N	135	185	9	1140	875		492	462	1133

of my expenses" only ranges from 45 per cent of the boys in the Junior Colleges to 50 per cent of those at the Private Liberal Arts Colleges. Those checking that their parents would pay all of their expenses ranges only from 6 per cent at the State Colleges to 9 per cent at the Catholic Men's Colleges. Therefore, the proportion of college costs that the student expects will be met by his family remains quite constant even though the actual cost involved varies greatly among the colleges. This data was, of course, gathered while the students were in their senior year in high school and before they were actually faced with any of the costs of college, so it is difficult to say how realistic the students' expectations actually were in this regard.

Family Attitude Toward College

The students were asked to indicate how their families felt about their going to college and the proportions indicating different attitudes are shown for each of the types of colleges in Table 7-7. The families of approximately 95 per cent of the boys and 90 per cent of the girls in all types of colleges want them to attend college. About 5 per cent of the boys and 10 per cent of the girls indicate that their parents are either indifferent to their going or do not want them to attend. More boys than girls feel that their parents insist that they go to college, while more girls than boys feel their parents are indifferent to their going. Approximately one fifth of the boys in the Private Liberal Arts Colleges feel their parents are insisting that they attend, while in the State Colleges, this proportion drops to 10 per cent. Among the girls this proportion is 12 per cent in the Private Liberal Arts Colleges and drops to 7 per cent in the State Colleges. There is more variance among the different colleges in the girls' perceptions of their family attitudes than in the boys'. In the Private Liberal Arts Colleges, only 4 per cent of the girls feel their parents are indifferent or do not want them to attend college. In the Junior Colleges, State Colleges, and certain of the colleges of the University, these proportions range from 10 to 15 per cent.

Plans for Graduate or Professional Training

It is estimated that at least two thirds of the seniors obtaining bachelor's degrees from colleges in this country hope to undertake further graduate or professional training.[1] These figures show that at least one third enter full-time further training beyond the bachelor's degree. For this reason, students were asked as high school seniors if they had any plans for graduate or professional training after their undergraduate college work and a substantial proportion of those planning to enter college indicated that, even at this time, they were considering education beyond the undergraduate degree. Because of the way this item was worded, many of the students did not answer it. Of those students who answered it, the proportions indicating

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[1] Davis, James A., and Bradburn, Norman M. Great Aspirations. Mimeo Report published by the National Opinion Research Center, University of Chicago, September, 1961.

Table 7-7

A Comparison of Types of Minnesota Colleges
by Reported Family's Feelings Toward College

	University of Minnesota								
Family's Feelings	Ag %	GC %	IT %	SLA %	Priv L. A. %	Cath M. %	Cath F. %	Junior %	State %
MALE									
Insists I Go	12	14	13	18	18	18		18	10
Wants Me to Go	79	82	84	79	80	80		77	81
Indifferent	9	4	2	3	1	2		4	8
Doesn't Want Me to Go	--	--	--	--	--	--		--	--
Won't Allow Me to Go	--	--	--	--	--	--		--	--
Total	100	100	99	100	99	100		99	99
FEMALE									
Insists I Go	12	10	20	9	12		11	11	7
Wants Me to Go	77	80	70	83	84		80	76	81
Indifferent	11	10	10	8	3		8	13	11
Doesn't Want Me to Go	--	--	--	--	--		2	1	1
Won't Allow Me to Go	--	--	--	--	--		--	--	--
Total	100	100	100	100	99		101	101	100
Male N	226	536	615	1187	825	650		849	1459
Female N	151	240	10	1218	902		533	586	1324

plans are shown for each of the types of colleges in Table 7-8. The figures in this table indicate that there are large differences in these plans between students in different types of colleges. Over twice as many students have plans for graduate work in Private Liberal Arts Colleges than they do in Junior or State Colleges or the University's College of Agriculture. Almost half of the boys in the Private Liberal Arts Colleges have such plans. The proportions of girls with such plans are considerably smaller than of boys. Here also the girls in the Private Liberal Arts Colleges show a considerably larger per cent having such plans as compared with girls in the State and Junior Colleges.

Number of Books in the Home

The students were asked to indicate the number of books their families had in their homes. The proportions answering each of the categories are shown for each of the types of colleges in Table 7-9. In the two smallest categories, 0 to 9 and 10 to 24 books in the home, there appears a surprisingly high percentage of both men and women who claim this small number of books in their homes. In the Private Liberal Arts Colleges and the University's Institute of Technology, the percentages range from 5 to 9 with the exception of the small group of women in the Institute of Technology. Men in the University's College of Agriculture and both sexes in the Junior and State Colleges claim from 15 to 18 per cent in these two lowest categories of books in the home.

In the largest category of books in the home, over 100, we find from 40 to 50 per cent of the students in Private Liberal Arts Colleges, both men and women, and of men in the University's Institute of Technology, claiming this many books in their homes. Women in the University's College of Agriculture approximate closely to the Private Liberal Arts Colleges, with 38 per cent claiming 100 books or more in their homes. Men in the College of Agriculture and both sexes in the State and Junior Colleges show less than 30 per cent in this category of books in the home.

For all of the state's entering freshmen, 2 per cent said there were less than 10 books in their homes, 10 per cent reported 10 to 24 books, 22 per cent reported 25 to 49 books, 29 per cent reported between 50 and 100 books, and 38 per cent reported that their families had over 100 books in their homes. The total group and all of the groups being studied, with the exception of the small group of women in the University's Institute of Technology, can not be said to come from particularly "bookish" oriented homes.

Magazines in the Home

The students were asked to indicate from a list of magazines on the questionnaire those which were taken in their homes. The proportions of students reporting each magazine are shown for each of the types of colleges in Table 7-10. The magazines are listed in these tables in order of the over-all state-wide percentage of students indicating these magazines. The Reader's Digest is the one magazine which is found in the majority of the

Table 7-8

A Comparison of Types of Minnesota Colleges
by Percentage of Students Planning on Graduate or Professional School

	University of Minnesota								
	Ag	GC	IT	SLA	Priv L. A.	Cath M.	Cath F.	Junior	State
MALE									
Percentage Considering Graduate Work	24%	19%	40%	37%	47%	33%		25%	19%
N Answering Item	156	290	384	619	489	360		575	840
FEMALE									
Percentage Considering Graduate Work	14%	13%	40%	20%	22%		21%	11%	13%
N Answering Item	119	143	5	873	693		370	387	903

Table 7-9

A Comparison of Types of Minnesota Colleges by Reported Number of Books in Home

	University of Minnesota							
Number of Books	Ag %	IT %	SLA %	Priv L. A. %	Cath M. %	Cath F. %	Junior %	State %
MALE								
0 - 9	2	1	1	1	1		3	4
10 - 24	13	8	6	7	7		14	13
25 - 49	30	22	15	15	19		28	26
50 - 99	26	28	28	25	30		30	28
100 or more	28	42	50	52	43		26	28
Total	99	101	100	100	100		101	99
FEMALE								
0 - 9	1	--	1	--		2	5	3
10 - 24	7	--	6	5		7	13	14
25 - 49	22	10	18	18		21	27	25
50 - 99	34	10	30	28		30	28	31
100 or more	38	80	46	48		40	27	28
Total	102	100	101	99		100	100	101
Male N	227	606	1172	830	647		854	1461
Female N	152	10	1214	897		535	593	1333

Table 7-10

A Comparison of Types of Minnesota Colleges by Magazines Read

	University of Minnesota									
Magazines	Ag %	GC %	IT %	SLA %	Priv L. A. %	Cath M. %	Cath F. %	Range Junior %	Other Junior %	State %
MALE										
Reader's Digest	59	62	63	66	73	63		61	63	58
Better Homes and Gardens	39	50	42	45	43	45		37	38	40
Saturday Evening Post	32	35	37	38	39	35		37	31	34
Ladies' Home Journal	36	27	28	34	39	32		38	31	31
Life	31	40	32	42	34	38		27	34	29
Good Housekeeping	28	33	25	30	33	37		27	29	29
McCall's	30	32	29	28	32	30		22	27	29
FEMALE										
Reader's Digest	66	73	--	66	71		57	59	57	61
Better Homes and Gardens	50	57	--	43	45		41	33	33	38
Saturday Evening Post	36	34	--	36	37		36	34	39	35
Ladies' Home Journal	41	41	--	40	40		33	34	31	35
Life	39	48	--	41	32		34	35	27	26
Good Housekeeping	36	37	--	34	31		34	29	29	29
McCall's	46	43	--	38	38		32	30	30	35

Note.--Added percentages in each column will not equal 100 per cent.

(Table 7-10 Continued)

	University of Minnesota									
Magazines	Ag %	GC %	IT %	SLA %	Priv L. A. %	Cath M. %	Cath F. %	Range Junior %	Other Junior %	State %
MALE										
Look	26	35	24	31	28	27		22	32	30
Time	17	23	20	29	25	32		13	18	15
Farm Journal	55	3	14	7	24	12		6	33	26
The Farmer	48	3	13	6	21	10		6	24	24
Successful Farming	47	3	14	6	20	11		7	25	23
Sports Illustrated	9	23	13	21	18	21		11	15	17
National Geographic	12	14	16	15	17	12		8	11	8
Newsweek	9	19	14	18	17	27		13	19	14
FEMALE										
Look	23	37	--	27	26		25	24	30	30
Time	21	29	--	28	24		28	16	16	16
Farm Journal	28	4	--	8	23		16	3	29	31
The Farmer	29	2	--	7	23		10	4	27	28
Successful Farming	25	2	--	5	22		13	6	24	28
Sports Illustrated	13	17	--	16	11		18	9	7	10
National Geographic	15	17	--	13	19		11	9	11	9
Newsweek	17	26	--	22	17		30	18	20	15

(Table 7-10 Continued)

	University of Minnesota									
Magazines	Ag %	GC %	IT %	SLA %	Priv L. A. %	Cath M. %	Cath F. %	Range Junior %	Other Junior %	State %
MALE										
Sports Afield	27	22	17	15	17	19		27	21	23
U. S. News & World Report	10	9	13	14	16	16		5	11	9
Popular Mechanics	19	16	20	14	12	15		17	20	18
Capper's Farmer	26	1	5	2	9	4		4	12	12
Popular Science	7	12	15	9	9	9		14	15	11
Coronet	10	11	9	11	9	8		12	8	10
Redbook	12	9	8	11	7	10		11	10	11
American Home	5	4	5	5	7	6		6	5	5
FEMALE										
Sports Afield	11	12	--	10	12		11	17	10	12
U. S. News & World Report	13	15	--	15	14		17	6	8	11
Popular Mechanics	15	14	--	12	12		12	17	16	12
Capper's Farmer	12	1	--	2	10		5	3	14	13
Popular Science	10	8	--	7	5		6	9	9	4
Coronet	5	14	--	10	8		8	10	5	10
Redbook	14	11	--	13	11		10	16	14	14
American Home	12	11	--	9	12		9	9	9	11

(Table 7-10 Continued)

	University of Minnesota									
Magazines	Ag %	GC %	IT %	SLA %	Priv L. A. %	Cath M. %	Cath F. %	Range Junior %	Other Junior %	State %
MALE										
Parents' Magazine	3	4	5	4	5	5		5	3	4
True	6	8	8	9	4	8		18	7	9
Holiday	2	4	3	3	4	4		1	3	3
Atlantic Monthly	--	3	1	4	3	2		2	2	1
Fortune	--	3	1	4	2	3		--	2	1
Argosy	3	5	4	5	2	4		8	6	5
Harper's	--	3	1	4	1	2		2	2	2
New Yorker	--	3	1	5	1	3		--	1	1
FEMALE										
Parents' Magazine	5	7	--	6	5		4	7	5	4
True	8	5	--	7	4		4	15	7	5
Holiday	9	10	--	6	4		4	3	4	4
Atlantic Monthly	4	3	--	5	2		4	2	1	1
Fortune	2	3	--	2	3		4	--	1	1
Argosy	5	2	--	4	2		1	6	4	3
Harper's	4	6	--	4	3		2	4	3	2
New Yorker	2	7	--	5	2		3	--	--	1
Male N	231	549	615	1192	537	657		401	409	1471
Female N	151	242	--	1227	587		539	288	256	1340

homes of college students at all types of colleges. For most magazines, higher proportions of students in the Private Liberal Arts Colleges report the magazine in their homes than do students in other types of colleges, although in most cases the Catholic liberal arts college and the different colleges of the University have almost as many students reporting each magazine in their homes. For certain magazines, such as Sports Afield and Popular Science, higher proportions of students reporting these magazines are found in the Junior and State Colleges. Certain of the farm magazines are reported by most of the students from farms in each of the colleges. Therefore, the high percentages of students in certain colleges who report these magazines reflect the higher proportions of students from farms in these types of colleges. In general, the differences between the types of colleges in various magazines reported in the students' homes are not large. The differences in general are quite small and do not support any particular stereotype of the magazine-reading background of a student who goes to a particular type of college.

Parental Organizations

The students also indicated on the questionnaire the organizations to which their parents belonged. A partial listing of these organizations is shown in Table 7-11. Far and away the chief organization to which the students' parents belonged was the PTA. Though the differences in the proportions for PTA membership are not substantial for the parents of either males or females, one college group shows a considerably different pattern. The Range Junior Colleges have a much smaller percentage of parents belonging to the PTA. The Range Junior Colleges also have a much larger percentage of parents belonging to labor unions than any of the other groups. Labor union membership is lowest for the parents of State College men and women and College of Agriculture men. For Catholic Men's and Women's Colleges there is, not surprisingly, a heavy percentage of parents reporting Knights of Columbus membership. Membership in farm organizations reflects primarily the farm background of the students attending the different types of colleges.

Plans for Marriage

The students were asked if they had any idea when they planned to get married. Those who had plans were asked when this marriage was likely to occur. The proportions checking each of the categories are shown for each of the types of colleges in Table 7-12. In this table it is seen that approximately one fifth of the boys and one third of the girls were considering marriage during the next several years. Although it might be expected that girls attending a two-year junior college might be more likely to have more immediate plans for marriage than those attending a four-year liberal arts college, the figures in Table 7-12 do not show consistent differences in this direction. Girls attending the University's two-year General College and those entering home economics in the College of Agriculture show particularly large proportions with such marriage plans. Several of the Catholic Women's Colleges have higher proportions of girls who say they are "not planning on marriage" than women in most other colleges. This may reflect the plans of a portion of girls in these colleges to become nuns.

Table 7-11

A Comparison of Types of Minnesota Colleges
According to Organizations to Which the Students' Parents Belong

	University of Minnesota								
Organizations	Ag %	GC %	IT %	SLA %	Priv L. A. %	Cath M. %	Range Junior %	Other Junior %	State %
MALE									
PTA	64	58	62	65	69	64	39	53	56
Rotary	1	2	2	2	3	2	1	2	2
Knights of Columbus	6	8	7	6	--	41	12	10	10
Lions	3	3	3	3	6	5	2	2	5
Labor Union	12	29	23	22	13	21	43	23	14
Farm Bureau	16	1	3	3	5	3	--	8	7
Farmers' Union	13	1	4	1	10	3	1	9	9
Chamber of Commerce	3	5	6	7	13	12	9	8	12
League of Women Voters	3	3	4	4	4	4	1	4	2
Male N	231	549	615	1192	537	657	401	409	1471

Note.--Added percentages in each column will not equal 100 per cent.

(Table 7-11 Continued)

	University of Minnesota							
Organizations	Ag %	GC %	SLA %	Priv L. A. %	Cath F. %	Range Junior %	Other Junior %	State %
FEMALE								
PTA	72	71	69	73	67	38	58	60
Rotary	--	3	2	2	3	1	2	1
Knights of Columbus	7	10	6	1	40	16	8	9
Lions	3	1	3	5	3	2	1	4
Labor Union	21	21	26	12	20	35	25	13
Farm Bureau	15	--	2	10	3	--	8	9
Farmers' Union	7	1	2	5	4	--	9	10
Chamber of Commerce	13	5	7	12	13	6	7	10
League of Women Voters	2	6	4	4	2	1	2	2
Female N	151	242	1227	587	539	288	256	1340

Table 7-12

A Comparison of Types of Minnesota Colleges by Percentages of Students Reporting When They Plan to Marry

	University of Minnesota								
When Marry	Ag %	GC %	IT %	SLA %	Priv L. A. %	Cath M. %	Cath F. %	Junior %	State %
MALE									
Already Married	--	--	--	--	--	--		--	--
This Year	--	--	--	--	--	--		--	--
Next Year	--	--	--	--	--	--		--	--
In a Few Years	21	19	20	20	21	18		19	23
Can't Say	69	63	69	66	68	68		65	64
Not Planning on Marriage	10	18	10	14	12	14		15	12
Total	100	100	99	100	101	100		99	99
FEMALE									
Already Married	--	--	--	--	--		--	--	--
This Year	--	--	--	--	--		--	--	--
Next Year	2	--	--	1	1		--	1	--
In a Few Years	42	41	20	31	32		24	29	29
Can't Say	51	51	60	60	61		60	57	64
Not Planning on Marriage	5	8	20	8	6		15	13	7
Total	100	100	100	100	100		99	100	100
Male N	229	547	613	1188	826	650		857	1463
Female N	152	242	10	1225	902		536	592	1342

Chapter 8

PERSONALITY DIFFERENCES AMONG STUDENTS ATTENDING DIFFERENT TYPES OF COLLEGES

This chapter deals with differences in personality, values, and attitudes of students in different types of colleges. In any discussion of such variables, it must be remembered that they are related to both ability and to socioeconomic status. Therefore, differences in ability and socioeconomic factors discussed in the two previous chapters must be kept in mind when considering the differences in personality variables among entering-freshman classes.

The "After High School--What?" questionnaire, which was completed by the state-wide population of high school seniors, contained 25 personality items from the Minnesota Counseling Inventory. Thirteen of these items were from the most discriminating items of the Social Relations scale (SR). Scores on this scale refer to the nature of the student's relations with other people. Students with low scores are usually gregarious, have good social skills, and appear to be happy and comfortable with others. Students with high scores tend to be socially inept and unhappy and uncomfortable with groups of peers or adults.

Twelve personality items were from the Conformity scale (C) of the Minnesota Counseling Inventory. This scale was derived from the Psychopathic Deviate (Pd) scale of the Minnesota Multiphasic Personality Inventory (MMPI). Students with low scores are usually reliable and responsible. Although not necessarily docile or overly submissive, they understand the need for behavior codes and social organization. Students with high scores are likely to be rebellious and may be irresponsible and impulsive. They tend to be individualistic, self-centered, and some have juvenile court records.

In addition to items from these two scales, four other items were included which dealt with willingness to take risks and willingness to accept responsibility for one's behavior.

Social Relations

Mean scores on the Social Relations scale are shown for students of each of the different types of colleges in Table 8-1. A significant mean difference on this scale is found between the sexes. Women attending college responded to statements in this scale in such a way as to indicate they were considerably more sociable than were college men. This was also true for all Minnesota high school seniors, the parent population from which the Minnesota college population here being studied was derived (Berdie and Hood, 1964).

Table 8-1

Means and Standard Deviations on the Social Relations Scale for Various College Groups

	University of Minnesota				Private Liberal Arts Colleges	Catholic Women's Colleges	Catholic Men's Colleges	Junior Colleges	State Colleges
	Ag	GC	IT	SLA					
MALE									
Mean	4.22*	3.82	4.18**	3.35**	3.37**		3.50*	4.20**	3.90
Standard Deviation	2.69	2.64	3.03	2.90	2.70		2.64	2.80	2.76
Number	209	493	559	1072	765		599	789	1384
FEMALE									
Mean	3.34	3.08	--	3.11**	3.24	3.31		3.73**	3.49*
Standard Deviation	2.51	2.16	--	2.47	2.58	2.51		2.54	2.51
Number	145	226	--	1137	849	502		509	1235

Social Relations Scale

Minnesota Male Freshmen N = 6348 Mean = 3.769 SD = 2.826

Minnesota Female Freshmen N = 5005 Mean = 3.347 SD = 2.530

*Difference from state-wide college freshman mean of sex significant at .05 level
**Difference from state-wide college freshman mean of sex significant at .01 level

Because of this consistent sex difference on sociability for Minnesota high school seniors as well as for Minnesota college freshmen, students in each type of college were compared with the total population of college freshmen by sex. To make this comparison, the mean of each college group was compared to the mean of the total group of all Minnesota entering freshmen by sex, then the z-score (standard deviation units). First the mean and standard deviation for the total group of all college freshmen was determined by sex. Next the mean of each college group was converted into a z-score (standard deviation unit) in terms of the total group mean. For example, the Minnesota students entering Catholic Men's Colleges with z-scores of -.10 obtained a mean score on the Social Relations scale which fell one tenth of a standard deviation below the mean for the state-wide population of college men.

Males in the University's College of Agriculture reported significantly poorer social relations than students in most other colleges. (High scores indicate poor social relations.) Students from farm backgrounds have already been shown to be less socially skilled than students from towns and cities (Berdie and Hood, 1964). Since approximately half of the men in the College of Agriculture were from farms, it is not surprising that they report more social discomfort than other students. Girls in the College of Agriculture do not differ from the average female college student on this scale. Most of the girls in the College of Agriculture are in home economics and come from a wide range of backgrounds. As was mentioned above, on almost all college campuses girls report significantly better social adjustment than do boys. This data indicates that the difference in social skills between the sexes is particularly large at the University's College of Agriculture.

Engineering students are reputed to be less socially adept and less interested in people than are liberal arts students. When the scores on the social relations items are compared for the Institute of Technology male students and College of Liberal Arts male students within the University, it is seen that there is some basis for this reputation. The mean score for engineering students on this scale is significantly above that for CLA students. In the General College at the University, a junior college for students who are less able or have poor high school records, there also is a large difference between the sexes on this scale. The males indicated slightly poorer social adjustment than the average college student and significantly below that reported by the men in the University's College of Liberal Arts. The girls, on the other hand, reported better social adjustment than girls in any other type of college.

The University of Minnesota is a very large metropolitan university with over 30,000 students. It was hypothesized that the more shy, less socially adept students would be more likely to choose smaller liberal arts colleges, and therefore, that the average student in the University's College of Liberal Arts would be better socially adjusted than the average student in the smaller colleges. The Catholic Men's Colleges are also smaller schools and several of them have a fairly cloistered atmosphere about them. Less extroverted, less socially skilled students were expected to be found in these colleges. Large differences were expected for the Catholic Women's Colleges where it was predicted that these girls would show significantly poorer social adjustment. In addition to being small and somewhat cloistered, these colleges are not coeducational and should have less emphasis on dating activities and other social skills.

The data in Tables 8-1 and 8-2 show that this did not turn out to be the case in any marked degree. Males in smaller liberal arts colleges obtained scores on the social adjustment items similar to the University's liberal arts males. Although the men in the Catholic colleges receive slightly higher scores on the social adjustment items than other liberal arts males, the differences were small and not statistically significant. Girls attending the smaller Private Liberal Arts Colleges and the Catholic Women's Colleges reported slightly poorer social adjustment than girls attending the University's College of Liberal Arts. However, again, these differences were small and neither of the differences were statistically significant from the University's liberal arts girls. Even the small differences which did occur could easily be explained in terms of the University attracting a higher proportion of metropolitan girls who report slightly better social adjustment than students from the smaller towns and farms. These small differences may reflect a difference in residence area per se rather than social adjustment as a factor in the selection of a college.

Both males and females who attended either State Colleges or Junior Colleges reported more social discomfort than those attending the liberal arts colleges in the state. Students attending these colleges tend to have less ability and come from lower socioeconomic backgrounds than students attending four-year liberal arts colleges, and this in part may account for the significantly poorer social adjustment shown by students at these colleges.

Conformity Scale

Mean scores on the items from the Conformity scale of the questionnaire are shown on Table 8-3. Again, z-scores for each group by sex were compared to the total group by sex. These z-scores are shown in Table 8-4.

It was hypothesized that students attending the University would score highest on this scale. The University has an urban environment with a very heterogeneous student population. There is less need to conform, fewer rules and regulations, and less control of student life. Students going to Private Liberal Arts Colleges were expected to be the most conforming of all, since at the Catholic institutions there is closer control and more discipline. Almost none of these hypotheses were supported by the data. It was difficult to hypothesize what the scores would be for the State and Junior Colleges. On the one hand, their students have poor achievement records which might indicate more rebellion and less responsibility. On the other hand, most of these students are living at home and there might be a tendency for rebellious students to leave home to attend college to avoid conflict with their parents.

As expected, women appeared more conforming, less rebellious, and more responsible than men. The most conforming men were found in the University's Institute of Technology, College of Agriculture, and in the Private Liberal Arts Colleges. Men in the University's College of Liberal Arts obtained a mean score indicating slightly less conformity than these other three male groups; however, none of the differences between these groups and CLA men

Table 8-2

Z-Scores of Mean Social Relations Scores of Minnesota Freshmen in Different Types of Colleges as Compared with the State-Wide College Population of Minnesota Freshmen

	University of Minnesota				Private Liberal Arts Colleges	Catholic Women's Colleges	Catholic Men's Colleges	Junior Colleges	State Colleges
	Ag	GC	IT	SLA					
MALE									
Z-Score	+.16*	+.02	+.15**	-.15**	-.14**		-.10*	+.15**	+.04
FEMALE									
Z-Score	-.08	-.10	--	-.09**	-.04	-.02		+.15**	+.06*
Social Relations Scale									
Minnesota Male Freshmen	N = 6348		Mean = 3.769			SD = 2.826			
Minnesota Female Freshmen	N = 5005		Mean = 3.347			SD = 2.530			

*Difference from state-wide college freshman mean of sex significant at .05 level
**Difference from state-wide college freshman mean of sex significant at .01 level

Table 8-3

Means and Standard Deviations on the Conformity Scale for Various College Groups

	University of Minnesota				Private Liberal Arts Colleges	Catholic Women's Colleges	Catholic Men's Colleges	Junior Colleges	State Colleges
	Ag	GC	IT	SLA					
MALE									
Mean	1.94*	2.57**	1.91**	2.06**	1.95**		2.24	2.38**	2.44**
Standard Deviation	1.54	1.78	1.44	1.60	1.50		1.66	1.66	1.68
Number	215	485	555	1064	763		594	793	1372
FEMALE									
Mean	1.70	2.33**	--	1.66**	1.57**	1.62*		1.96**	1.88**
Standard Deviation	1.27	1.70	--	1.36	1.35	1.36		1.44	1.38
Number	142	224	--	1132	859	494		514	1251

Conformity Scale

Minnesota Male Freshmen N = 6323 Mean = 2.218 SD = 1.641

Minnesota Female Freshmen N = 5018 Mean = 1.784 SD = 1.390

*Difference from state-wide college freshman mean of sex significant at .05 level
**Difference from state-wide college freshman mean of sex significant at .01 level

Table 8-4

Z-Scores of Mean Conformity Scores of Minnesota Freshmen in Different Types of Colleges as Compared with the State-Wide College Population of Minnesota Freshmen

	University of Minnesota				Private Liberal Arts Colleges	Catholic Women's Colleges	Catholic Men's Colleges	Junior Colleges	State Colleges
	Ag	GC	IT	SLA					
MALE									
Z-Score	-.17*	+.21**	-.19**	-.09**	-.17**		+.02	+.10**	+.11**
FEMALE									
Z-Score	-.06	+.39**	--	-.09**	-.15**	-.12*		+.13**	+.07**

Conformity Scale

Minnesota Male Freshmen N = 6323 Mean = 2.218 SD = 1.641

Minnesota Female Freshmen N = 5018 Mean = 1.784 SD = 1.390

*Difference from state-wide college freshman mean of sex significant at .05 level
**Difference from state-wide college freshman mean of sex significant at .01 level

were statistically significant.

Mean scores obtained by girls in the University's College of Agriculture, College of Liberal Arts, and in the Private Liberal Arts Colleges were also very similar. Both males and females in the University's General College obtained scores on this scale significantly higher than students in any of the other colleges at the University or, for that matter, in any of the other types of colleges in the state. As is mentioned above, the University's General College is a junior college for students who are less able or who have poorer high school records. The scores on this scale indicate that these students are significantly more rebellious and less responsible than the average student in the other colleges. This rebelliousness and lack of responsibility undoubtedly played an important part in the poorer high school records which therefore made them ineligible to enter other types of colleges.

Students in the University's College of Liberal Arts received similar scores on the Conformity scale as students in the Private Liberal Arts Colleges. Therefore, the hypothesis that University students would be more rebellious and less conforming than students in the smaller colleges was not confirmed. There was a large difference in scores between men attending Catholic colleges and students in other liberal arts colleges, but the difference was opposite to that which had been predicted.

Students entering the Catholic Men's Colleges appeared more rebellious, less responsible, and less conforming. It is not clear why these more rebellious Catholic men chose to attend colleges with more discipline and more control. (These responses were obtained in high school nine months before entering college.) A possible explanation was the following: the students filled out the questionnaires in high school and a high proportion of the men going to Catholic colleges attended parochial high schools. It was therefore possible that there was something about the atmosphere in parochial high schools which resulted in students attaining higher scores on this scale.

When scores in such parochial schools were compared with public high schools, no differences were found. In both types of high schools, students choosing Catholic Men's Colleges were more rebellious than those choosing public institutions. Therefore a more plausible explanation may be that because of the attitude and previous behavior of these students, they were encouraged to attend these smaller men's colleges with more discipline and control in the hope that their behavior would be modified by this discipline. Differences were not found among girls in Catholic Women's Colleges whose mean score on this scale was similar to that of girls in other four-year liberal arts colleges.

Students of both sexes attending State Colleges and Junior Colleges obtained significantly higher scores on the Conformity scale than students in the four-year liberal arts colleges. Again, several factors related to these higher scores include the fact that these students are less able and come from slightly lower socioeconomic backgrounds. High scores which indicate more rebellion and less conformity do not, therefore, appear to be related to leaving home to attend college.

Risk-Taking

Another personality item on the questionnaire which showed significant differences between students in different types of colleges was that dealing with risk-taking behavior. This item read as follows:

"If you had your choice, which type of job would you pick? (Check one)

(1)_____ A job which pays quite a low income but which you are sure of keeping.

(2)_____ A job which pays a good income but which you have a 50-50 chance of losing.

(3)_____ A job which pays an extremely good income if you make the grade but in which you lose almost everything if you don't make it."

The means for this item are shown for students in each of the types of colleges in Table 8-5 and the percentages of students checking each of the responses are shown in Table 8-6.

Students attending the University's Institute of Technology and College of Liberal Arts were the least likely to pick the secure response. Those entering the Institute of Technology were likely to choose the middle response, while those in the College of Liberal Arts gave the least secure response. Students in the College of Agriculture were more likely than either of the other two University groups to choose the more secure response. Among all the high school seniors in the state, the farm students were more likely than others to choose the secure response. The larger number of farm boys in the College of Agriculture may account for this difference. There are fewer girls from farm backgrounds in the College of Agriculture and their responses are similar to those of girls in liberal arts colleges.

Students attending other liberal arts colleges were more likely to pick the secure response than were students attending the University's College of Liberal Arts. Men attending State and Junior Colleges were more likely to prefer a low income, more secure job, and less willing to gamble on a good income and a job that was less safe than other college men except those in the College of Agriculture. Similar differences were found among the girls; however, most of the differences were of a smaller magnitude.

In responding to this item, the girls were considerably more conservative than the boys. For example, in the University's College of Liberal Arts, less than 10 per cent of the boys chose the most secure, low income job as compared with approximately 20 per cent of the girls. In any case, with the overwhelming majority of the students picking the two alternatives involving more risk, the college freshmen in this study could not be considered to be a security-ridden group.

Table 8-5

Comparison of Mean Scores on Risk-Taking Item[1]
Obtained by Students in Different Types of Colleges

	University of Minnesota				Private Liberal Arts Colleges	Catholic Women's Colleges	Catholic Men's Colleges	Junior Colleges	State Colleges
	Ag	GC	IT	SLA					
MALE									
Mean	2.11**	2.25	2.36**	2.40**	2.30		2.36**	2.10**	2.20**
Number	244	536	605	1170	536		646	207	405
FEMALE									
Mean	1.98	1.82**	--	2.09**	1.93	2.02		1.87**	1.89**
Number	151	240	--	1204	576	525		276	251

[1] "If you had your choice, which type of job would you pick? (Check one)
(1)_____ A job which pays quite a low income but which you are sure of keeping.

(2)_____ A job which pays a good income but which you have a 50-50 chance of losing.

(3)_____ A job which pays an extremely good income if you make the grade but in which you lose almost everything if you don't make it."

**Difference from state-wide college freshman mean of sex significant at .01 level

Table 8-6

A Comparison of Types of Minnesota Colleges by Percentage of Students Responding to Each Degree of Risk[1]

	University of Minnesota				Private				
					Liberal	Cath.	Cath.		
	Ag	GC	IT	SLA	Arts	Men's	Women's	Junior	State
	%	%	%	%	%	%	%	%	%
If you had your choice, which type of job would you pick?									
MALES									
A job which pays quite a low income but which you are sure of keeping.	18	18	9	9	13	12		23	17
A job which pays a good income but which you have a 50-50 chance of losing.	49	41	46	41	43	39		43	46
A job which pays an extremely good income if you make the grade but in which you lose almost everything if you don't make it.	31	40	44	48	44	48		33	36
FEMALES									
A job which pays quite a low income but which you are sure of keeping.	27	32	--	19	22		26	35	31
A job which pays a good income but which you have a 50-50 chance of losing.	49	52	--	51	53		47	44	43
A job which pays an extremely good income if you make the grade but in which you lose almost everything if you don't make it.	24	15	--	28	22		24	20	20

[1] For each group percentages do not total 100%. A small percentage of students did not respond to the item.

Summary

Entering-student bodies in the different colleges and types of colleges studied here differed in regard to certain personality characteristics. The expectation that less socially adjusted, more introverted students would seek smaller, non-coeducational colleges received no support. Among the various types of liberal arts colleges, no important differences were found in the social adjustment of their students, regardless of college size, type of control, and whether or not coeducational. At the University, men in engineering showed more social discomfort than men in the College of Liberal Arts. Men attending Catholic colleges appeared to be more non-conforming and rebellious than students attending other types of liberal arts colleges, while there are no differences among women at these types of colleges. Students attending State and Junior Colleges were less conforming and less socially adjusted than other college students. Female college students were more conforming and better socially adjusted than male students. Willingness to take risks appeared to be related to the type of college the student chooses to attend. Students of both sexes who attended the large heterogeneous state university appeared to be the most willing to take risks.

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Chapter 9

RELATIONSHIP OF HSR AND MSAT TO GRADES IN MINNESOTA COLLEGES

In the State-Wide Testing Program from which part of the data for the current study came (Swanson, et al, 1963) and in other studies predicting grades for college students, certain generalizations have been forthcoming about the relationship of high school percentile rank (HSR) and scholastic aptitude scores to grades. HSR usually correlates with grades better than does a scholastic aptitude score, i.e., we obtain a higher zero-order correlation coefficient for HSR and grades than for Minnesota Scholastic Aptitude Test (MSAT) score and grades. This also means that when we combine the two variables in a multiple regression equation, HSR will carry more weight in accounting for the explained variance of the criterion variable--first year GPA (McNemar, 1955). Generally we find higher correlation coefficients for women than for men between these variables and college grades (Seashore,1962). Certain statistical considerations also lead us to generalize that the more selective a given institution, the lower the correlation coefficients one obtains between the predictor and criterion variables (Gulliksen, 1950). Of the two predictor variables here being studied, HSR is practically always used as an explicit selection variable and MSAT, though not always used as an explicit selection variable, is, because of its positive relationship to other selection variables, always an incidental selection variable.

We shall examine first across individual colleges, the zero-order and multiple correlation coefficients and the beta weights for MSAT scores and HSR in relationship to first year GPA to see how well these generalizations or statistical expectations hold. While examining the zero-order and multiple correlation coefficients and the beta weights, we shall also examine the efficiency of using more than one variable as a predictor. If HSR has a higher relationship to grades than does MSAT, will adding MSAT as a predictor in a multiple regression equation significantly increase how well we predict? We shall also examine the reverse situation when MSAT has a higher relationship to grades than does HSR. We shall then examine the college groups to see if any typical pattern of relationship prevails among individual colleges within a given group.

Comparison of HSR and MSAT as Predictors of First Year GPA

The zero-order correlation coefficients of HSR and MSAT scores with first year GPA are shown in Table A-26 of the Appendix. We have coefficients for men from 33 colleges and for women from 32 colleges. The generalization that HSR is a better predictor of grades than the scholastic aptitude test (MSAT) turns out to be largely true but it does have exceptions. It is true for the men in 31 of the 33 comparisons, and for the women, in 25 of the 32 comparisons. For College F, a four-year coeducational Private Liberal Arts College, MSAT has a higher correlation with GPA than does HSR for both men and women. This college has a mean HSR of 93 with a standard deviation of 12 so there is little room for variance on HSR.

This relationship of these variables was not true for the men in a 1959 study which parallelled this part of the 1961 study (Swanson,et al, 1961). Of the seven colleges where, for women, the MSAT correlation with grades was higher than the HSR correlation with grades, colleges from each group are represented--two of the University colleges, two of the liberal arts colleges, two of the Junior Colleges, and one of the State Colleges. For the University, this finding is true for the women in the College of Agriculture and for the College of Education. For the College of Agriculture women, this was also found in the 1959 study while it was not true that year for the College of Education.(Swanson, et al, 1961). Of the four liberal arts colleges women's groups (two Catholic and two Private Liberal Arts Colleges) two repeated the pattern from the 1959 study while two did not. The one women's group among the Junior Colleges was not a repeater from the 1959 study. Thus the probability is very high that HSR is a better predictor of college grades than is a scholastic aptitude test score, in this case, MSAT. However, a caution should be noted that this generalization should not be made to cover all kinds of tests or institutions. A case in point is the University's Institute of Technology where a mathamatics achievement test consistently correlates higher with grades than does HSR. However, that variable has not been studied in this project.

With a high majority of individual colleges showing HSR as a better predictor of grades than MSAT, it is not surprising that for all college groups being studied, HSR also shows a higher relationship to grades.

Of additional interest in the relationship of HSR, MSAT, and first year GPA is the question whether using both variables leads to a substantial increase of predictability of GPA over using just the one predictor variable which has the highest zero-order correlations. A statistical test for this situation is available (Wert, et al, 1954). In applying this test for males in the 33 individual colleges being studied we find a significant gain in only 15 of them. In all cases where there is not a significant gain by adding a second predictor variable, it is when HSR is the best predictor and MSAT fails to add significantly. Of 11 Junior Colleges, only one, a private junior college, shows a significant gain by adding MSAT to HSR as a predictor. Among the State Colleges, for males, only two of the five show a significant gain by adding a second variable (MSAT in both cases) to the prediction of GPA. Of the University's six colleges, four of them show a significant gain when adding MSAT. The two that do not are the College of Agriculture and the University of Minnesota at Morris. Six of the eight Private Liberal Arts Colleges and two of the three Catholic Men's Colleges show a significant gain by using both HSR and MSAT.

For the 32 colleges for which females are being studied, 22 show significant gain by using both HSR and MSAT as predictors of GPA. Eight of the 10 that do not are Junior Colleges. Again in the Junior College group we find only one college with a significant predictive gain from adding MSAT to HSR. The other two women's colleges that do not show a gain are Private Liberal Arts Colleges. For one of them it is HSR that does not add significantly to the prediction.

The college groups being studied have generally followed the prevailing pattern. For men, the Range Junior College group and the Other Junior College group do not show a significant gain by adding MSAT. However, the State College group does, even though three of the five individual colleges did not. For women's college groups only one, the Other Junior College group, does not show a significant predictive gain by adding MSAT. All other women's groups do.

Prediction for Men Versus Prediction for Women

We have 27 colleges for which we can compare the male-female groups directly, i. e., each of the 27 institutions is coeducational. We have also three Catholic Men's Colleges which we can compare with four Catholic Women's Colleges. In 19 of the 27 colleges, women show higher correlation coefficients for HSR and GPA than do men; for MSAT and GPA, women show higher coefficients in 21 of 27 colleges; for multiple correlations, HSR and MSAT combined, women show higher coefficients in 18 of 27 colleges. For the University and State Colleges, women always have higher correlation coefficients for HSR and GPA, MSAT and GPA, and for HSR and MSAT combined. It is among the Private Liberal Arts Colleges and Junior Colleges that we find the higher correlation coefficients for men than for women; for HSR, 8 in 17 comparisons; for MSAT, 6 in 17 comparisons; and for HSR and MSAT combined, 9 in 17 comparisons. Among the Catholic colleges, women's GPA appears definitely more predictable than the GPA for men. Comparing the multiple coefficients when HSR and MSAT are combined, we find .55, .57, and .67 for the three Catholic Men's Colleges and .63, .73, .75, and .78 for the four Catholic Women's Colleges. The 1959 study cited earlier shows that there were even more of the comparisons showing women's grades more predictable (Swanson, et al, 1961). In 1959, where men's grades were more predictable, it was in the Private Liberal Arts and Junior College groups. Although some of the differences counted as showing more predictability of grades for one sex than the other were not large, enough of these differences were substantial enough to make it important for each individual college to determine what situation prevails with respect to sex differences in predictions.

To answer the question posed about restriction in range and its effect on the relationship of the predictor variables and grades, we used a simple rank order procedure, ranking the institutions by 1) the standard deviation of HSR and the zero-order correlation coefficients of HSR and GPA, and 2) the same for MSAT and the correlation coefficient of MSAT and GPA. These rank order rhos were as follows:

HSR, Men, 33 institutions.	.55*
HSR, Women, 32 institutions.	.49*
MSAT, Men, 33 institutions	-.01
MSAT, Women, 32 institutions	.55*

*Significant at .01 level

There appears a moderate relationship in three of the four comparisons between range of scores as expressed by the standard deviation of the predictor variable and the zero-order correlation coefficient of that variable and the criterion. For men on MSAT no relationship was found.

Summary

We have looked at the relationship of HSR and MSAT scores to first year GPA in several different ways. It seems to be largely true that HSR is a better predictor of grades than is MSAT. For more than half of the men's groups, MSAT does not add significantly to the HSR prediction of GPA. This is most pronounced among the Junior Colleges where it is also true for the women's groups with only one exception. Women's first year GPA appears definitely more predictable than men's first year GPA though there are exceptions in about one fourth of the cases. It is generally true, but only moderately so, that the more select a college is, the lower the relationship of predictor variables (in this study HSR and MSAT) to the criterion (first year GPA).

Putting the several facets of this chapter together, the authors feel that even though the generalizations being studied were found to be largely true, there are enough exceptions to warrant the statement that each college needs to study its own situation. Each college needs to discover what is uniquely best for it in the use of HSR and MSAT as selective indices. Generalizations frequently conceal as much information as they reveal. Though the generalizations reflect prevailing practices in Minnesota colleges in the early 1960's, this does not mean that they should be taken as norms or standards against which to judge an institution's selection of students. With the large populations of high school seniors available from 1964 and on, the increasing pressure to go to college, the changing of admissions requirements in several Minnesota colleges, and the increased cost of going to college, and new and better tests available, the relationship of these variables to each other may well change. The authors feel that the data in this and other chapters is a valuable addition to the knowledge available about students. They hope this study will encourage individual institutions to make their own studies, particularly as their admissions policies change, and assess selection of students and the predictability of their success, using this study as a guideline and base point for comparison.

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Chapter 10

THE RELATIONSHIP OF SOCIOECONOMIC FACTORS TO ACHIEVEMENT IN COLLEGE

In Chapter 5 the socioeconomic items on the questionnaire were described and the differences among students in different types of colleges were discussed. In addition to comparing students in different colleges on the socioeconomic variables (SEV), it was also possible to study the relationship of each of these variables to college achievement as measured by college grade point average in each of the types of colleges and to study the differences in the relationships of these variables in each of the colleges and types of colleges. In this study, the student's grade point average was considered the dependent variable and a number of independent variables were included for study.

Using a computer (CDC 1604), zero-order Pearsonian product moment and multiple correlation coefficients were computed for students of each sex between all of the socioeconomic variables. The estimate of the relationship obtained in this manner can only be considered a rough estimate because of the statistical analyses used. In the first place, some of the variables were dichotomous and biserial correlations would have been more appropriate than product moment correlations. Next, in all likelihood, many of the relationships were not rectilinear and correlational methods based on curvilinear relationships would have been more appropriate. The multiple correlational analyses involving dichotomous and curvilinear relationships are complex but somewhat less rigorous than those involving rectilinear and product moment methods. The readily available means of analysis limited the study to the methods reported here.

Parental Education

Zero-order correlation coefficients are presented for each of the socioeconomic variables in Table 10-1. In this table it can be seen that the level of education achieved by either parent is not significantly related to student achievement in most types of colleges and in the few types of colleges where a significant relationship does exist, this relationship is of a very small magnitude. Even in the Junior Colleges, where the relationship is the highest, neither of these variables would account for even as much as 2 per cent of the variance in student grade point averages. No differences exist between the influences of the father's and mother's education.

Adequacy of Family Income

On this item the student checked one of six descriptions of family income ranging from "frequently have difficulty making ends meet" to "well-to-do" and "wealthy." Zero-order correlations are also shown between this

Table 10-1

A Comparison of Correlation Coefficients Between Socioeconomic Variables and Student Achievement at Different Types of Colleges

	University of Minnesota														
Variable	Agriculture		Institute of Technology	College of Liberal Arts		Private Liberal Arts		Catholic Colleges		Range Junior Colleges		Other Junior Colleges		State Colleges	
	M	F	M	M	F	M	F	M	F	M	F	M	F	M	F
Father's Education	-.10	-.05	.01	.07*	.04	.03	.03	-.10*	-.01	.16**	.15*	.02	.03	-.05	-.05
Mother's Education	-.02	-.01	.04	.14**	.09**	.04	.03	-.08	-.02	.17**	.08	.08	.10	-.01	-.01
Adequacy of Income	-.06	.09	-.05	-.01	.02	-.09	-.09*	-.12**	-.07	-.08	-.03	.03	-.04	-.10**	-.11**
Family Help with College Expenses	.12	.09	-.02	-.04	.00	.08	.20**	.09*	.20**	-.05	.09	.04	-.05	.13**	.18**
Family Feelings About College	-.04	.14	-.03	-.00	.01	.03	.04	.04	.17**	-.06	.06	.04	.01	-.00	.02
Number of Books In the Home	-.09	.08	.00	.06	.07*	.01	.02	-.01	-.06	.06	.10	-.04	.05	-.04	.03
Live on Farm	.22**	.11	.04	.06	.05	-.03	.05	.06	.03	.02	-.10	.09	.07	.05	.14**
Number	166	121	464	857	930	409	478	511	399	318	212	292	174	1084	1014

* Significant at .05 level
** Significant at .01 level

variable and college grade point average in Table 10-1. Again it is seen that the few coefficients which were statistically significant have little practical significance and there is no real meaningful relationship between student achievement and answers to this item regarding family affluence.

Family Help with College Expenses

The students were asked to indicate roughly the extent to which their families would help them meet the expense of college. The students checked one of four phrases describing this contribution ranging from "pay all my expenses" to "pay none of my expenses." The lowest integer was assigned to the phrase "pay all my expenses" and the highest to "pay none of my expenses." Low significant relationships were found between answers on this item and grades in several types of colleges. These relationships were highest among the women in the Private Liberal Arts Colleges and the Catholic Women's Colleges and lowest among several colleges of the University. Since the higher integers were assigned to the phrases indicating less family support, the positive correlations mean that students receiving less family support tend to obtain slightly higher grades in certain colleges.

Family Attitude Toward College

This item asked the student how his family felt about his going to college. Most students said that their parents "wanted" them to go to college. In some colleges, a substantial proportion said that their families "insisted" that they attend, and relatively small proportions of students indicated that their parents either were "indifferent" or didn't want them to go. As is seen in Table 10-1, responses on this item were not related to college grades except in the Catholic Women's Colleges where there was a significant relationship.

Since the integers assigned to this item ranged from the lowest where the family insisted on college attendance and highest where the family did not want the student to attend, a positive correlation means that girls in these Catholic Women's Colleges who checked that their parents were indifferent, or that they were attending college against their parents' wishes, tended to receive slightly higher grades. The fact that it may take more motivation to attend college in the face of family indifference may account for the higher grades achieved by these girls. Another hypothesis might be that girls who attended college and who had checked this item are more able and have to be to attend college without family encouragement. As will be seen later, this explanation would not account completely for this relationship in that this item adds significantly to the multiple correlation coefficient even when high school rank and MSAT are included in the equation.

Number of Books in Home

The students were asked to check the number of books their families had at home as this would contribute to an index of the cultural level of the home. In this analysis, a positive correlation would mean that the more books in the home, the higher grades a student achieves in college. As is seen in Table 10-1, there is little relationship between the number of books a student reports he has in his home and the grades he achieves in college. It was seen in Chapter 5 that there is considerable variance among the different colleges in the number of books students reported in their homes but that while this factor may be related to the type of college a student attends, it is not related to the grades he achieves after he gets there.

Farm Background

The students were asked whether or not they lived on a farm and the relationship of this variable to college grades is also shown in Table 10-1. This is a dichotomous variable[1] in which living on a farm was assigned the higher integer so that a positive correlation indicates that higher grades are associated with living on a farm. This variable shows little relationship to college grades except in the College of Agriculture at the University where it is particularly high for the boys. In fact, this is the highest correlation coefficient in Table 10-1. The college achievement of students from farm backgrounds will be discussed in greater detail in a later chapter.

Multiple Correlation Coefficients

Multiple correlation coefficients were computed between all of the six socioeconomic variables discussed above and achievement in college. Multiple correlations were computed both for all students of each sex in each type of college and also in each college taken individually. These multiple correlation coefficients are shown for the boys in Table 10-2 and for the girls in Table 10-3.

The top row of multiple correlation coefficients shows the relationship of the six variables taken as a group to achievement in each type of college. These coefficients fall in the general range of .1 to .2, indicating that even taken in total, these variables account for less than 5 per cent of the variability in college achievement. The median multiple correlation coefficient obtained between these six variables and achievement of the colleges within each type is also shown. In general, the coefficients obtained for individual colleges are considerably higher than those obtained for the total group, ranging in the vicinity of .3 to .4. The multiple correlation coefficients are shown for each of the individual colleges in Appendix B.

For purposes of comparison, the multiple correlation coefficients obtained from using high school rank and the scholastic aptitude test score as reported in Chapter 9 are also given in Tables 10-2 and 10-3. In the case of each of the different types of colleges, the magnitude of the multiple

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[1] This is an example of a variable which is dichotomous and for which biserial correlations would have been more appropriate.

Table 10-2

A Comparison of Multiple Correlation Coefficients Between Several Socioeconomic Variables and Student Achievement at Different Types of Colleges

	University of Minnesota							
MALE	Ag	IT	SLA	Priv L. A.	Cath M.	Range Junior	Other Junior	State
SEV								
Total Group r	.26	.09	.17	.13	.16	.23	.17	.15
Median r Among Colleges in Group	--	--	--	.35	.27	.39	.34	.27
HSR and MSAT								
Total Group r	.68	.58	.48	.60	.60	.69	.60	.61
Median r Among Colleges in Group	--	--	--	.61	.57	.71	.64	.60
HSR, MSAT, and SEV								
Total Group r	.69	.58	.50	.61	.61	.70	.61	.61
Median r Among Colleges in Group	--	--	--	.67	.61	.78	.73	.64
Number	166	464	857	409	511	318	292	1084

Table 10-3

A Comparison of Multiple Correlation Coefficients Between Several Socioeconomic Variables and Student Achievement at Different Types of Colleges

	University of Minnesota							
FEMALE	Ag	IT	SLA	Priv L. A.	Cath F.	Range Junior	Other Junior	State
SEV								
Total Group r	.26	--	.19	.22	.24	.22	.15	.24
Median r Among Colleges in Group	--	--	--	.39	.39	.42	.39	.34
HSR and MSAT								
Total Group r	.77	--	.56	.62	.67	.67	.59	.74
Median r Among Colleges in Group	--	--	--	.60	.74	.76	.67	.74
HSR, MSAT, and SEV								
Total Group r	.79	--	.57	.63	.68	.68	.60	.74
Median r Among Colleges in Group	--	--	--	.68	.78	.81	.72	.78
Number	121	--	930	478	399	212	174	1014

correlation coefficients obtained for the six socioeconomic variables in no way compares with the considerably greater magnitude of those obtained from the high school achievement and test score variables.

These tables also show multiple correlation coefficients obtained when all of these variables--high school rank, scholastic aptitude test score, and the six socioeconomic variables--are combined in a multiple regression equation. The coefficients obtained with this equation using eight variables can be compared with that using just the two--high school rank and MSAT--to examine the extent to which socioeconomic variables add to high school rank and test score variables in the prediction of college achievement. This comparison indicates that for each of the different types of colleges, socioeconomic variables add practically nothing in the prediction of college achievement from that which can be obtained from high school rank and scholastic aptitude test scores alone. Not only is this true by type of college, but in most cases, it is also true for individual colleges.

Although there are significant differences between different types of colleges in the socioeconomic backgrounds of their students, these socioeconomic factors have only slight relationships to the grades a student achieves in any type of college, and they add practically nothing to the prediction of grades which can be obtained from the use of high school rank and scholastic aptitude test scores alone.

In order to further examine those socioeconomic variables which have even a slight relationship to college grades, the beta weights obtained in the normal regression equations for the socioeconomic variables alone and the socioeconomic variables combined with high school rank and MSAT are shown in Table 10-4. In each case only the beta weights are shown when the student could complete the item in such a way that it caused a change in predicted honor point ratio of 1 : 20 (.05 of an honor point).

First looking at the beta weights for the males from the equation in which just socioeconomic variables were included, it is seen for two of the colleges of the University that only the variable dealing with education of mother contributes significantly in the regression equation. It is negatively related to grades of students in General College, while positively related to those of students in the College of Liberal Arts. Living on a farm contributes positively to the prediction of grades for men in the University's College of Agriculture. Several socioeconomic variables are related to student achievement in the Range Junior Colleges, but these are not found elsewhere and no longer show any substantial relationship to grades in the equation in which high school rank and test score are also included. In the Other Junior Colleges which also have a very substantial number of students from farms, living on a farm is also related to grades. Again, this does not appear when high school rank and MSAT are included. In the regression equations in which high school rank and MSAT are included, the only beta weights of any significance are those found on the variables dealing with living on a farm for the University's College of Agriculture, maternal education for the General College and College of Liberal Arts at the University, and the number of books in the home for the Other Junior College group (negatively related to grades). This beta weight is only large enough to be included here when high school rank and MSAT are included. Perhaps able students from homes of high cultural status do not attend junior colleges unless, for some reason or other, it is expected that they

Table 10-4

Significant Beta Weights for Normal Regression Equations When Using Socioeconomic and Ability Variables to Predict College Achievement in the Different Types of Colleges

MALE	University of Minnesota									
	Agriculture		General College		Institute of Technology		College of Liberal Arts		Private Liberal Arts	
Variable	SEV (4-10)	HSR, MSAT & SEV (2-10)	SEV (4-10)	HSR, MSAT & SEV (2-10)	SEV (4-10)	HSR, MSAT & SEV (2-10)	SEV (4-10)	HSR MSAT & SEV (2-10)	SEV (4-10)	HSR, MSAT & SEV (2-10)
Multiple Correlation Coefficient	.258	.690	.157	.406	.087	.585	.168	.451	.134	.606
HSR		.596		.330		.480		.338		.478
MSAT		.146		.194		.195		.190		.209
Education of Father										
Education of Mother			-.132	-.110			.136	.105		
Adequacy of Income										
Family Help with Expenses	.122									
Number of Books										
Live on Farm	.227	.140								
Family Feelings About College										
Number	166		359		464		857		409	

(Table 10-4 Continued)

MALE	Catholic Men's Colleges		Range Junior Colleges		Other Junior Colleges		State Colleges	
Variable	SEV (4-10)	HSR, MSAT & SEV (2-10)	SEV (4-10)	HSR, MSAT & SEV (2-10)	SEV (4-10)	HSR, MSAT & SEV (2-10)	SEV (4-10)	HSR, MSAT & SEV (2-10)
Multiple Correlation Coefficient	.157	.606	.232	.699	.167	.612	.153	.612
HSR		.491		.661		.559		.516
MSAT		.184		.024		.066		.142
Education of Father			.129					
Education of Mother			.116					
Adequacy of Income			-.116					
Family Help with Expenses							.116	
Number of Books						-.133		
Live on Farm					.122			
Family Feelings About College								
Number	511		318		292		1084	

(Table 10-4 Continued)

FEMALE	University of Minnesota									
	Agriculture		General College		Institute of Technology		College of Liberal Arts		Private Liberal Arts	
Variable	SEV (4-10)	HSR, MSAT & SEV (2-10)	SEV (4-10)	HSR, MSAT & SEV (2-10)	SEV (4-10)	HSR, MSAT & SEV (2-10)	SEV (4-10)	HSR, MSAT & SEV (2-10)	SEV (4-10)	HSR, MSAT & SEV (2-10)
Multiple Correlation Coefficient	.261	.791	.249	.507	--	--	.122	.417	.223	.627
HSR		.519		.356		--		.279		.435
MSAT		.382		.251		--		.214		.254
Education of Father		-.163								
Education of Mother			.128	.103						
Adequacy of Income	.132		-.117	-.119						
Family Help with Expenses	.113		.127						.211	
Number of Books	.121									
Live on Farm	.131									
Family Feelings About College	.135		-.110	-.131						
Number	121		166		--		930		478	

(Table 10-4 Continued)

FEMALE	Catholic Women's Colleges		Range Junior Colleges		Other Junior Colleges		State Colleges	
Variable	SEV (4-10)	HSR, MSAT & SEV (2-10)	SEV (4-10)	HSR, MSAT & SEV (2-10)	SEV (4-10)	HSR, MSAT & SEV (2-10)	SEV (4-10)	HSR, MSAT & SEV (2-10)
Multiple Correlation Coefficient	.240	.685	.219	.684	.146	.600	.243	.739
HSR		.448		.477		.548		.505
MSAT		.331		.286		.066		.310
Education of Father			.125					
Education of Mother								
Adequacy of Income								
Family Help with Expenses	.179						.175	
Number of Books								
Live on Farm							.139	
Family Feelings About College	.135							
Number	399		212		174		1014	

may not make the grade elsewhere. Perhaps they get poorer grades at junior colleges and this accounts for this particular relationship. With the exception of farm students in the College of Agriculture, the socioeconomic background variables for males do not appear to be significantly related to grades in any of the types of colleges in any systematic fashion.

Among the women, several socioeconomic variables yielded significant beta weights in the normal equation, but with the exception of girls in the University's General College, all of these relationships dropped out when high school rank and MSAT were included in the regression equation. For girls in the College of Agriculture, a number of socioeconomic variables were related to grades. However, all dropped out and the education of father appeared negatively related to grades when high school rank and MSAT were included. Family help with college expenses, in which the less the family would contribute the higher the grades the girls received, appeared for the Catholic Women's Colleges and the State Colleges. However, again this variable contributed little to the prediction of grades when high school rank and MSAT were included. It may be that this relationship may occur in the Private Liberal Arts Colleges and the Catholic Women's Colleges because able girls from poor homes would not have been able to attend these two types of more expensive colleges except had they received scholarship aid. Therefore, when high school rank and MSAT are included, this variable no longer contributes significantly to the prediction of college achievement. Among the girls in the University's General College, maternal education, adequacy of family income, and family's attitude toward college contributed significantly to the regression equations both when high school rank and MSAT were and were not included. Apparently the few girls in the General College who attend from lower socioeconomic backgrounds are from families who are less interested in their attending college and they must have more motivation to attend college under these conditions and consequently received slightly better grades.

Chapter 11

THE RELATIONSHIP OF PERSONALITY CHARACTERISTICS TO ACADEMIC ACHIEVEMENT

The responses to the 25 items from the Minnesota Counseling Inventory and the few additional personality items which were included on the "After High School--What?" questionnaire were compared for students in the types of colleges in Chapter 6. Significant differences among these variables were found among the types of colleges and individual colleges. The relationship between these personality variables and academic achievement in the types of colleges is summarized in this chapter.

Correlation coefficients and multiple regression coefficients between academic grade point average and different personality scales, subscales, and individual items were computed. In the case of the individual items the answers are dichotomous and biserial correlations would have been more appropriate than product moment correlations. Product moment correlations were used here, however, because of the availability of the computer program. In this analysis, only 18 of the 25 personality items from the Minnesota Counseling Inventory were included because the remainder were those which almost all college students answered in a particular direction.

The relationships between freshman year grade point average and answers to the various personality items studied here are shown for each of the types of colleges in Table 11-1. Many of the items were significantly related to academic achievement but in almost all cases it was a very low order relationship. The exception was item number 47 which asked, "Would you say that your high school grades are a fairly accurate reflection of your ability?" Answers to this item were found to be significantly related to college grades in almost every type of college. The relationship was in the general order of -.30 to -.40. Since this item was scored in such a way that "yes" = 1 and "no" = 2, the negative relationship indicates that those students who felt that their high school grades did not accurately reflect their ability achieved a significantly lower grade point average in college than those who felt their grades did reflect their ability. Answers on this item were found to be slightly related to high school achievement but unrelated to ability as measured by the Minnesota Scholastic Aptitude Test. Furthermore, in our regression equation in which all other types of variables in this study were included, this item added significantly to the prediction obtained from such an equation. Therefore, this item was studied at considerably greater length and the results are reported in Chapter 17. All other personality items were scored "yes" = 1, "no" = 0. Therefore a positive relationship indicates that students responding "yes" tend to achieve higher grades.

Several items from the Conformity scale of the MCI showed a significant relationship to grade point average in a number of the different types of colleges. Two of the items from the Conformity scale--number 23, "In school I sometimes have been sent to the principal for cutting up," and number 38, "My parents and family find more fault with me than they should"--showed significant relationships in most of the types of colleges for students of both sexes. Other items from this scale showing significant relationships with

Table 11-1

Correlation Coefficients of Personality Items
with Grade Point Average for Each Type of College in Minnesota

	Male								
	University of Minnesota								
Personality Item	Ag	GC	IT	SLA	Private Liberal Arts	Catholic Men's	Range Junior	Other Junior	State
21	-.14	-.10*	-.16**	-.12**	-.06	-.07	+.01	-.07	-.10**
23	-.26**	-.11*	-.06	-.10**	-.11*	-.00	-.24**	-.12*	-.13**
24	+.03	+.02	-.08	-.01	-.14**	-.14**	-.15*	-.08	-.09**
26	-.05	-.06	-.15**	-.02	-.05	+.04	+.06	-.05	-.05
27	-.20*	-.14**	-.10*	-.11**	-.11*	-.07	-.22**	-.02	-.11**
28	+.18*	+.07	+.15**	+.10**	+.10*	+.12**	+.00	-.03	+.01
29	-.07	-.03	-.05	+.03	-.17**	-.11*	-.13*	-.12*	-.06*
30	+.01	-.02	-.02	+.03	+.09	+.12**	+.14*	-.04	+.06
31	-.05	+.04	-.06	+.02	+.06	+.05	-.02	+.07	+.02
33	+.15	+.14**	+.09	+.06	+.08	+.03	+.01	+.04	+.06
35	-.14	-.10	-.05	-.12**	-.11*	-.09	-.08	+.04	-.02
37	-.32**	-.04	-.20**	-.09*	-.07	-.07	-.05	-.16**	-.03
38	-.11	-.13*	-.13**	+.01	-.16**	-.09*	-.13*	-.14*	-.07*
41	+.11	+.05	+.04	+.03	+.03	+.07	+.05	+.08	+.05
42	+.20*	+.12*	+.08	+.05	+.03	-.01	+.03	+.01	+.05
43	+.14	+.05	+.14**	+.05	-.03	+.03	-.08	+.15**	+.03
44	-.14	-.15**	-.12**	-.07*	-.07	-.01	-.12*	+.09	-.14**
45	+.18*	+.13*	+.15**	+.13**	+.09	+.04	+.04	+.14*	+.10**
46	+.09	-.06	+.09	+.02	+.12*	+.03	+.02	+.05	+.06
47	-.41**	-.06	-.33**	-.29**	-.44**	-.34**	-.39**	-.35**	-.31**
49	-.15	+.05	+.02	-.01	-.04	+.07	+.09	-.06	+.02

(Table 11-1 Continued)

	Female							
	University of Minnesota							
Personality Item	Ag	GC	SLA	Private Liberal Arts	Catholic Women's	Range Junior	Other Junior	State
21	+.01	+.04	-.08*	-.08	-.02	-.17*	-.08	-.10**
23	+.09	+.03	-.07*	-.03	-.13*	-.17*	-.19*	-.07*
24	-.16	+.01	-.06	+.02	-.14**	-.13	-.17*	-.08**
26	+.04	+.04	-.03	-.01	-.00	-.05	+.10	-.01
27	-.09	-.08	-.10**	-.06	-.08	-.05	-.12	-.04
28	-.07	+.03	+.06	+.07	+.09	+.14*	-.10	+.08**
29	-.06	-.07	-.06	-.10*	-.16**	-.06	-.21**	-.05
30	-.06	+.10	+.04	-.03	+.14**	+.03	+.05	+.07*
31	+.15	-.09	-.01	+.02	+.02	+.01	+.17*	+.07*
33	-.20*	-.02	+.06	+.06	+.06	+.13	+.10	+.10**
35	-.00	-.13	-.10**	-.15**	-.03	-.14*	-.17*	-.14**
37	+.09	+.05	-.08*	-.10*	-.02	-.10	-.13	-.12**
38	-.24**	-.08	-.03	-.10*	-.11*	+.01	-.07	-.07*
41	+.08	+.02	+.01	+.00	+.08	+.09	+.07	+.06
42	-.12	+.05	+.04	+.02	+.09	+.13	+.07	+.09**
43	-.20*	+.05	+.02	-.01	+.02	-.00	-.03	+.04
44	-.30**	-.04	-.11**	-.08	-.09	+.05	-.18*	-.07*
45	-.04	-.02	+.02	+.13**	+.12*	+.12	+.07	+.15**
46	+.03	+.11	+.08*	-.04	+.14**	+.05	+.11	+.05
47	-.37**	-.28**	-.22**	-.32**	-.32**	-.40**	-.29**	-.35**
49	+.17	-.00	+.10**	-.01	+.08	+.04	-.07	+.07*

grades in approximately half of the groups were number 44, "I have had very peculiar and strange experiences," number 27, "At times I have very much wanted to leave home," and number 29, "I find it hard to keep my mind on a task or job." Those responding "no" received higher grades.

Items from the Social Relations scale were less often related to academic achievement. A few Social Relations items did show small but significant relationships. Students who responded to the Social Relations items in such a way as to indicate better social adjustment or extroversion tended to achieve lower grades. Items showing such a relationship in approximately half of the college groups included number 45, "I stay in the background at parties or social gatherings," number 21, "I meet strangers easily," number 28, "I have difficulty in starting a conversation with a person who has just been introduced," number 35, "I enjoy entertaining people," number 37, "I like to meet new people," and number 24, "I feel self-conscious when reciting in class."

Although these personality items showed a significant relationship to academic achievement, most of them added very little to a multiple correlation coefficient over that obtained by using high school rank and MSAT score together.

Relationship of Scale Scores to Achievement

Total scores on the 13 items from the Social Relations scale and the 12 items from the Conformity scale were also obtained for each entering-college freshman. A factor analysis of the entire 25 items yielded five factors--three from the Social Relations scale named "Shyness," "Stagefright," and "Sociability," and two from the Conformity scale named "Rebellion" and "Raw Deal." Scores were also obtained for groups of items making up these five factors. The relationship of scores on these scales and subscales is shown for each of the college groups in Tables 11-2 and 11-3.

Scores on the Conformity scale are significantly related to academic achievement for students of both sexes in most of the types of colleges. This relationship is a negative one since high scores indicate more rebellious, less conforming students. An examination of the two factors which make up this scale reveals that the items contained in the factor labeled "Rebellion" account for almost all of this relationship and in many cases showed a higher relationship than the full 12 items. The factor labeled "Rebellion" is made up of 7 of the 12 items in the Conformity scale. These items are as follows: 23, 27, 29, 32, 34, 38, and 44. The relationship of the Conformity scale score to grades is particularly high for State College men and College of Agriculture women.

The Social Relations scale was related to academic achievement in only a few of the types of colleges. The highest relationship was found among men in the College of Agriculture. This relationship was in a positive direction. High scores on this scale indicate students who tend to be introverted and have difficulty in interpersonal relationships. This indicates that in some colleges the more introverted students get slightly better grades.

Among boys in the University's College of Agriculture and Institute of Technology the scores on this scale were significantly related to achievement, while for girls a significant relationship was found in the University's College

Table 11-2

Comparison of Multiple Correlation Coefficients Between Several Variables and Student Achievement at Different Types of Colleges

	Male								
	University of Minnesota				Private Liberal Arts	Catholic Men's Colleges	Range Junior Colleges	Other Junior Colleges	State Colleges
	Ag	GC	IT	SLA					
Social Relations Scale	.23**	.06	.16**	.05	.03	.02	-.04	.06	.03
Conformity Scale	-.11	-.19**	-.09*	.08*	-.20**	-.15**	-.21**	-.18**	-.18**
Factor 1 - Shyness	.20**	.07	.14**	.07*	.06	.03	-.01	.08	.05
Factor 2 - Rebellion	-.20**	-.22**	-.15**	-.10*	-.21**	-.13**	-.26**	-.20**	-.21**
Factor 3 - Stagefright	.09	.02	.02	-.01	-.07	-.07	-.08	-.04	-.05
Factor 4 - Raw Deal	.03	-.13**	-.01	-.04	-.10*	-.07	-.14**	-.09	-.11**
Factor 5 - Sociability	-.25**	-.07	-.21**	-.09*	-.06	-.04	.03	-.12*	-.08**
HSR and MSAT	.66	.39	.57	.48	.61	.61	.67	.58	.61
HSR, MSAT, SR, and C	.68	.42	.59	.50	.62	.61	.67	.59	.62
Number	200	451	518	917	466	560	356	355	1315

Table 11-3

Comparison of Multiple Correlation Coefficients Between Several Variables and Student Achievement at Different Types of Colleges

	Female							
	University of Minnesota			Private Liberal Arts	Catholic Women's Colleges	Range Junior Colleges	Other Junior Colleges	State Colleges
	Ag	GC	SLA					
Social Relations Scale	-.01	-.01	.08*	.10*	.01	.07	.03	.07
Conformity Scale	-.30**	-.10	-.08*	-.10*	-.16**	-.01	-.24**	-.12
Factor 1 - Shyness	-.03	.01	.10*	.08	.05	.12	.05	.08
Factor 2 - Rebellion	-.28**	-.12	-.13*	-.12**	-.16**	-.07	-.22**	-.12
Factor 3 - Stagefright	-.03	-.03	-.00	.06	-.10*	-.05	-.03	-.03
Factor 4 - Raw Deal	-.16	-.06	-.03	-.05	-.06	.02	-.04	-.03
Factor 5 - Sociability	-.00	.04	-.10*	-.09*	-.07	-.13*	-.08	-.12
HSR and MSAT	.75	.45	.56	.63	.69	.67	.62	.72
HSR, MSAT, SR, and C	.75	.45	.59	.63	.70	.67	.63	.72
Number	134	207	968	531	463	252	227	1182

of Liberal Arts and in the Private Liberal Arts Colleges. Scores on one of the factors included in this scale--Factor 5, labeled "Sociability"--showed a higher relationship to grades than did scores on the total scale. Items making up the sociability factor included 21, 22, 26, 33, 34, 36, 37, 39, 43, and 45.

Multiple Correlation Coefficients

Table 11-2 and Table 11-3 also show multiple correlation coefficients between college grades and high school rank and MSAT scores for each of the types of colleges. Also shown in this table are the multiple correlation coefficients obtained when scores on the Social Relations scale and the Conformity scale are added to high school rank and MSAT. The addition of the two personality scores added little to the multiple correlation coefficient obtained from the use of just high school rank and MSAT.

In a further analysis of the relationship between personality factors and college achievement, each of the 21 personality items was treated as an individual variable and all 21 items were included in a regression equation to obtain a multiple correlation coefficient with grade point average. The resulting multiple correlation coefficients are shown for each of the types of colleges for the males in Table 11-4 and females in Table 11-5. The coefficients for the 21 personality items fall in the general range of .3 to .6 indicating that these variables account for a significant proportion of variability in college achievement. Again, in these tables, multiple correlation coefficients obtained using the two more commonly used predictors--high school rank and scholastic aptitude test score--are shown. In certain types of colleges, the magnitude of the multiple correlation coefficients obtained from personality items approaches the magnitude of that obtained by using high school rank and test score.

In the third row of Tables 11-4 and 11-5 are shown the multiple correlation coefficients obtained by using high school rank and scholastic aptitude test score and the 21 personality items. It is seen that, in most types of colleges, the addition of the personality variables adds significantly to the relationship obtained from high school rank and test score alone. Personality variables, then, unlike socioeconomic variables, do add to the prediction of college achievement which can be obtained from achievement and test score data alone.

The extent of the relationship of these variables to college achievement varies considerably among the types of colleges. Furthermore, the extent to which personality variables add to the prediction of college achievement obtained from high school rank and MSAT score also varied considerably. In the University's College of Agriculture, the addition of personality variables added significantly to the already high multiple correlation coefficient obtained from high school rank and test score alone. In the State Colleges, on the other hand, these personality variables add little to the prediction obtained from achievement and test score variables alone.

Table 11-4

Comparison of Multiple Correlation Coefficients between Personality Variables and Student Achievement at Different Types of Colleges

MALE	University of Minnesota				Private Liberal Arts	Catholic Men's Colleges	Range Junior Colleges	Other Junior Colleges	State Colleges
	Ag	GC	IT	SLA					
21 Personality Variables									
Total Group r	.57	.31	.45	.43	.51	.46	.49	.46	.39
HSR and MSAT									
Total Group r	.68	.39	.58	.48	.60	.60	.69	.60	.61
HSR, MSAT, and 21 Personality Variables									
Total Group r	.75	.45	.64	.57	.66	.64	.72	.65	.63
Number	166	359	464	836	409	511	318	292	1084

Table 11-5

Comparison of Multiple Correlation Coefficients between Personality Variables and Student Achievement at Different Types of Colleges

FEMALE	Ag	GC	IT	SLA	Private Liberal Arts	Catholic Women's Colleges	Range Junior Colleges	Other Junior Colleges	State Colleges
21 Personality Variables									
Total Group r	.62	.44	--	.39	.38	.46	.49	.55	.43
HSR and MSAT									
Total Group r	.77	.46	--	.56	.62	.68	.67	.59	.74
HSR, MSAT, and 21 Personality Variables									
Total Group r	.82	.57	--	.59	.64	.72	.72	.69	.75
Number	121	166	--	916	478	399	212	174	1014

Beta Weights of Personality Items

In order to further study those personality items which, in a regression equation appear to have a significant relationship to college grades, the beta weights obtained in normal regression equations were examined. Such beta weights for a normal regression equation including only personality items and for a normal regression equation which included both personality items and the two predictor variables are shown in Tables 11-6 and 11-7. In these tables the beta weights shown are those for items on which an answer in a particular direction could cause a change in a predicted honor point ratio of one twentieth (0.05) of a grade point. In other words, a response in a particular direction could change a predicted grade point average from, for example, 2.20 to 2.25.

The item which has the largest beta weight is that on which the student indicated whether or not his high school grades were an accurate reflection of his ability. This item yielded a significant beta weight in the case of most colleges, not only in just the regression equation which included only personality items, but also remained significant in the regression equation to which high school rank and MSAT were added. Because of this finding, this item was studied more intensively and it has been treated separately in Chapter 17. Among the men, most of the personality items yielding significant beta weights were items from the Conformity scale. In the case of the University's College of Agriculture and the General College, there were four or five such items. With the exception of the one item mentioned above, the beta weights for almost all other personality items dropped out when high school rank and MSAT were added.

Among the girls in certain types of colleges, many of the items yielded significant beta weights in the regression equation in which only personality items were included. For the girls these items were from both the Conformity and Social Relations scales. Large numbers of significant beta weights were found for girls in the University's College of Agriculture and General College and in the Junior Colleges. Few were found for girls in the College of Liberal Arts or in the State Colleges. The items which continued to contribute after high school rank and MSAT had been added differed considerably among the types of colleges and no particular patterns were discernible.

Among students of both sexes the direction of the beta weights for the Social Relations items were such that a prediction of higher grades was made for students reporting less social competence. The direction of beta weights for items from the Conformity scale yielded a prediction of lower college achievement for responses indicative of rebellious and non-conforming behavior.

Table 11-6

Significant Beta Weights for Normal Regression Equations when Using Personality and Ability Variables to Predict College Achievement in the Different Types of Colleges

MALE	University of Minnesota								Private Liberal Arts	
	Agric		GC		IT		SLA			
Variables	Pers Items	HSR, MSAT & PI	Pers Items	HSR, MSAT & PI	Pers Items	HSR, MSAT & PI	Pers Items	HSR, MSAT & PI	Pers Items	HSR, MSAT & PI
Sent to principal	-.16									
Self-conscious reciting					-.13				-.15	
Wanted to leave home	-.11	-.10								
Hard starting conversation					.11					
Enjoy speaking before groups										
Know who is responsible									-.10	
Shy in contacts with people			.12	.11						
Like to meet people	-.24	-.17								
Parents find fault with me			-.10			-.11				
Easy to express my ideas			.10							
Strange and peculiar experiences			-.10							
Stay in background at parties					.11					
Grades reflect ability	-.32	-.17			-.31	-.17	-.26	-.14	-.40	-.24
Number	166		359		464		836		409	

(Table 11-6 Continued)

MALE	Catholic Men's Colleges		Range Junior Colleges		Other Junior Colleges		State Colleges	
Variables	Pers Items	HSR, MSAT & PI	Pers Items	HSR, MSAT & PI	Pers Items	HSR, MSAT & PI	Pers Items	HSR, MSAT & PI
Sent to principal			-.14					
Self-conscious reciting								
Wanted to leave home								
Hard starting conversation	.13							
Enjoy speaking before groups	.15		.12					
Know who is responsible								
Shy in contacts with people								
Like to meet people					-.12			
Parents find fault with me								
Easy to express my ideas							-.10	
Strange and peculiar experiences								
Stay in background at parties					.15	.10		
Grades reflect ability	-.34	-.14	-.33	-.14	-.31	-.13	-.28	
Number	511		318		292		1084	

Table 11-7

Significant Beta Weights for Normal Regression Equations When Using Personality and Ability Variables to Predict College Achievement in the Different Types of Colleges

	University of Minnesota						Private Liberal Arts	
	Agric		GC		SLA			
FEMALE Variables	Pers Items	HSR, MSAT & PI	Pers Items	HSR, MSAT & PI	Pers Items	HSR, MSAT & PI	Pers Items	HSR, MSAT & PI
I meet strangers easily	-.15		.12					
Sent to principal								
Self-conscious reciting	-.14	-.10						
At ease with people								
Hard starting conversation	.10		.11					
Can't keep mind on job								
Enjoy speaking before groups			.13	.14				
Know who is responsible	.10							
Shy in contacts with people	-.26							
Enjoy entertaining people			-.20	-.14				
Like to meet people		.13						
Parents find fault with me	-.14		-.14	-.11				
Easy to express my ideas								
Wish I weren't so shy			.13					
Avoid people	-.17		.16	.12				
Strange and peculiar experiences	-.29	-.21						
Stay in background at parties							.10	
Friends plan on college			.12	.17				
Grades reflect ability	-.30		-.29	-.20	-.17		-.32	
Job security, risk-taking	.18	.12			.11			
Number	121		166		930		478	

(Table 11-7 Continued)

FEMALE Variables	Catholic Women's Colleges Pers Items	 HSR, MSAT & PI	Range Junior Colleges Pers Items	 HSR, MSAT & PI	Other Junior Colleges Pers Items	 HSR, MSAT & PI	State Colleges Pers Items	 HSR, MSAT & PI
I meet strangers easily				-.12		-.13		
Sent to principal					-.15			
Self-conscious reciting			-.11					
At ease with people					.15	.16		
Hard starting conversation					-.12			
Can't keep mind on job					-.14	-.16		
Enjoy speaking before groups	.10	.10						
Know who is responsible					.16			
Shy in contacts with people								
Enjoy entertaining people					-.11	-.14		
Like to meet people					-.13			
Parents find fault with me								
Easy to express my ideas			.10					
Wish I weren't so shy	.15	.14						
Avoid people								
Strange and peculiar experiences								
Stay in background at parties	.12							
Friends plan on college					.12			
Grades reflect ability	-.28		-.34	-.19	-.24		-.32	
Job security, risk-taking	.13					-.15		
Number	399		212		174		1014	

Chapter 12

THE ANALYSIS OF RELATIONSHIP AMONG ALL VARIABLES IN PREDICTING FIRST YEAR GRADE POINT AVERAGE

Typically multiple correlation coefficients of .50 to .70 are obtained between college grades and a combination of predictor variables. However, the same variables may have different beta weights for predicting grades when used across different groups.

In the current study using first year grade point average as a criterion, 30 predictor variables were studied: achievement as expressed by high school rank, scholastic aptitude ability as measured by the Minnesota Scholastic Aptitude Test, and 28 other variables broken down into biographical background information, socioeconomic indices and answers to personality items. Some variables, which most students answered in one direction, were not analyzed. A list of all the variables used is shown in the Appendix. Two questions will be discussed: Are there significant differences across colleges and college groups on the predictors that carry the most weight in predicting grades in those colleges? Can we increase predictability of grades significantly by adding socioeconomic and personality predictor variables to the usual academic predictors, high school rank and scholastic aptitude test results? Various facets of the predictability are discussed in other chapters. Chapter 9 discusses high school rank and MSAT alone in their relationships to grades. High school rank was most often the best predictor and women were more predictable than men. Chapter 11 discusses the relationship of personality items to first year grade point average; Chapter 15 the relationship of the Social Relations scale and sociability items; Chapter 16 the relationship of the Conformity scale and the items of this scale; and Chapter 17 the students' answers to the question, "Would you say that your high school grades are a fairly accurate reflection of your ability?"

Procedure

Multiple regression analyses on all variables and various combinations of variables were performed on a 1604 CDC computer. In this computer analysis, out-put of both normal and ordinary equations was obtained. For the normal equations, beta weights of each of the variables being used were computed. It was through examination of these beta weights that answers were sought to the questions posed. A variable was included as significant if it would contribute .05 GPA points to the predicted GPA.

Table 12-1 shows the significant beta weights for males and Table 12-2 shows the significant beta weights for females. Looking first at Table 12-1 for the males we find that in every instance, high school rank had the largest beta weights. We also find that in every instance both high school rank and MSAT were included as having significant beta weights. In some cases, one of the other variables had a larger beta weight than MSAT although

Table 12-1

Significant Beta Weights of the Variables used in the Prediction of First Year Grade Point Average in Minnesota Colleges[1]

	MALES								
	University of Minnesota				Private Liberal	Catholic Men's	Range Junior	Other Junior	State
Variable	Agric	GC	IT	SLA	Arts	Colleges	Colleges	Colleges	Colleges
HSR	.49	.30	.37	.25	.33	.40	.57	.45	.46
MSAT	.12	.16	.23	.20	.22	.17	.09	.10	.15
Education of Mother		-.11		.10					
Number of Books								-.12	
Live on Farm	.15								
Wanted to Leave Home	-.10								
Like to Meet New People	-.17								
Family Finds Fault			-.11					-.11	
Stay in Backgound at Parties								.12	
Grades Reflect Ability	-.16		-.17	-.15	-.24	-.15	-.13	-.10	

[1] Significant beta weights not found for: education of father, adequacy of income, family help with college expenses, and personality items 21, 23, 24, 26, 28, 29, 30, 31, 33, 35, 41, 42, 43, 44, 46, and 49.

Table 12-2

Significant Beta Weights of the Variables used in the Prediction of First Year Grade Point Averages in Minnesota Colleges[1]

FEMALES

	University of Minnesota							
Variable	Agric	GC	SLA	Private Liberal Arts	Catholic Women's Colleges	Range Junior Colleges	Other Junior Colleges	State Colleges
HSR	.42	.28	.22	.38	.42	.36	.42	.47
MSAT	.35	.26	.21	.26	.31	.35	.13	.30
Education of Father	-.17							
Family Feelings about College	.14	-.12						
Meet Strangers Easily						-.12	-.11	
Self-Conscious Reciting	-.14							
At Ease with People							.16	
Hard to Keep Mind on Task							-.17	
Enjoy Speaking to Groups		.12			.11			
Know Who is Responsible							.11	
Enjoy Entertaining		-.11					-.14	
Like to Meet New People	.14							
Wish I Weren't So Shy					.13			
Avoid People When Possible	-.10							
Had Strange Experiences	-.21							
Friends Go To College		.17						
Grades Reflect Ability		-.20				-.19		
Type of Job							-.16	

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[1] Significant beta weights not found for: education of mother, adequacy of income, family help with college expenses, number of books, live on farm, and personality items 23, 27, 28, 33, 38, 41, and 45.

in general MSAT had the second largest beta weight. These instances are in the University's College of Agriculture where the answer to the question "live on farm" was significantly related to grades with larger beta weights than MSAT. A second was in the Other Junior Colleges on responses to the item, "I stay in the background at parties or social gatherings," and a third in the Private Liberal Arts Colleges where the answer to the question on grades reflecting ability had a higher relationship to GPA than did MSAT. Not many significant beta weights were found among the other variables. Most often when they were found they were among the personality items from the Social Relations scale or the Conformity scale. As these are discussed in separate chapters, they will not be discussed further here.

Outside of high school rank and MSAT, the one item that had significant beta weights for all groups except one was the answer to the question, "Would you say that your high school grades are a fairly accurate reflection of your ability?" The only exception among the male groups was in the University's General College. It should be borne in mind that although the beta weights for these items are negative, they are actually negatively related to grades. The net effect in the regression equation is that a positive amount is added to the prediction of GPA.

Turning next to Table 12-2 for women, we find that all comparisons showed high school rank to have the largest beta weight. We also find that high school rank and MSAT always showed significant beta weights for each of the groups studied. MSAT usually had the second largest beta weight to HSR but this was not always so. One of the exceptions was in the Other Junior Colleges where the answer to the item, "I feel at ease with people," had a higher beta weight than did MSAT. For this same group the answer to the question on the type of job that the woman would prefer also had a higher beta weight than did MSAT. In three of the groups studied there were a large number of the variables with significant beta weights. These are the Agriculture females where eight variables were found to have significant beta weights; the University's General College with seven variables with significant beta weights; and the Other Junior Colleges with eight variables with significant beta weights. In three of the women's groups, the College of Liberal Arts, the Private Liberal Arts Colleges, and the State Colleges, only two of the variables had significant beta weights. These were high school rank and MSAT. Looking at some of the predictor variables that do have significant weights for women, we find that father's education was one and it was negative for the University's College of Agriculture women. Answers to the item, "How does your family feel about your going to college?" showed significant beta weights in two instances, one for the University's College of Agriculture women where it was positive and one for the University's General College where it was negative. It is interesting that number of books in the home in no instance showed a significant beta weight. Several of the Conformity and Social Relations scale items showed significant beta weights but these were mostly for the three groups that have large numbers of significant beta weights: the University's College of Agriculture and General College and both of the two junior college groups. When we compare men and women we find that in all instances high school rank had the highest beta weights. Also in all instances, high school rank and MSAT both had significant beta weights. Women seemed to show significant beta weights much more often than did men. The items about grades accurately reflecting the student's ability, which was highly significant for men, having significant beta weights in seven out of the eight instances, was significant in only two cases for the women's group. One was for the University's General College and the other for the Range Junior College group.

Do the other variables add to the predictability of grades over high school rank and MSAT? This data is summarized in Table 12-3 for the groups being studied in this chapter. It shows the zero-order correlation coefficients for high school rank and grades, the multiple correlation coefficients for combined high school rank and MSAT with grades, and the multiple correlation coefficients when using all variables. From examination of the significant beta weights discussed, one would expect some significant gains over using just high school rank and MSAT for several of the groups. However we already found (Chapter 9) that in some cases, particularly in the Junior Colleges, MSAT did not add significantly to the prediction of grades over HSR alone. When one examines Table 12-3 it appears that we add significantly to the prediction of grades from using HSR and MSAT alone when we use all variables--even for the Junior Colleges group in which MSAT did not add significantly to high school rank. Whether or not an individual college should use these individual variables as predictors with incoming freshmen should not be decided on the basis of this data alone. The college would need to show that such results were stable over a period of time so that they could then set up appropriate prediction equations.

Individual Colleges and Beta Weight Analysis

The table of the beta weights for the individual colleges, except as shown in Tables 12-1, 12-2, and 12-3, have not been included in the Appendix. Whenever HSR and MSAT were eliminated and all other variables or combinations of variables (biographical only, socioeconomic only, and personality only) were studied by multiple regression analysis we appear to have some significant findings. However, in general, not enough of the variables other than HSR and MSAT have been significant. Those which have showed promise have been studied and the results shown in separate chapters, particularly Chapter 11, showing the relationship of personality items to grades, Chapter 15, on the Social Relations scale and the sociability items, Chapter 16, on the Conformity scale and the rebelliousness items, and Chapter 17, a discussion of grades reflecting the students' ability.

Summary

High school rank was far and away the best predictor of grades as studied in the current project. In most cases, MSAT added significantly to HSR, although there were exceptions. Few other variables showed a significant relationship with grades when added to high school rank and MSAT. One of the more important ones was the students' answers to the questions about their grades accurately reflecting their ability. On this study, one might generalize and say that two variable prediction equations, in general, seem to carry most of the predictive weight--HSR or some similar good index of high school performance and a good scholastic aptitude test. In the current study, the test is the Minnesota Scholastic Aptitude Test. Other predictor

Table 12-3

Zero-Order and Multiple Correlation Coefficients of Several Variables and Combination of Variables with First Year Grade Point Averages in Minnesota Colleges

Variable	University of Minnesota							Private Liberal Arts		Catholic Colleges		Range Junior Colleges		Other Junior Colleges		State Colleges	
	Agric		GC		IT	SLA											
	M	F	M	F	M	M	F	M	F	M	F	M	F	M	F	M	F
HSR	.67	.68	.33	.39	.55	.41	.49	.58	.58	.58	.61	.69	.64	.59	.58	.60	.69
MSAT	.42	.49	.19	.27	.39	.34	.44	.43	.49	.40	.53	.69	.45	.59	.42	.43	.61
HSR, MSAT	.68	.77	.38	.46	.58	.48	.56	.60	.62	.60	.67	.69	.67	.60	.59	.61	.74
SEV	.26	.26	.15	.25	.09	.18	.19	.13	.22	.16	.24	.23	.22	.17	.15	.15	.24
Personality	.57	.62	.31	.44	.45	.43	.39	.51	.38	.46	.45	.49	.49	.46	.54	.39	.43
Personality, HSR, MSAT	.75	.82	.45	.57	.64	.55	.59	.66	.64	.64	.72	.72	.72	.65	.69	.63	.75
All	.76	.84	.47	.59	.65	.57	.60	.66	.65	.64	.73	.74	.73	.66	.70	.64	.75

items work differently for different groups. In general, for some of the women's groups we obtained many more significant beta weights than we did for the men's groups. One quite significant item turned up for the University's College of Agriculture, where it was found that living on a farm was significantly related to grades for males in that college. The authors feel that these findings do not justify the addition of these other variables to the prediction of grades, although as some of the results approach significance, each college should study its own situation with a view of possibly making use of some of these variables.

Chapter 13

COLLEGE STUDENTS FROM FARM BACKGROUNDS

How well do students from rural areas succeed in college? In what ways do they differ from other college students in attitudes and personality characteristics? Is their pattern of achievement different from those of students from other areas? On one of the items on the questionnaire, the students indicated whether or not they lived on farms. In this analysis all students indicating that they lived on farms were compared on each of the different types of variables--ability, achievement, socioeconomic and personality variables, as well as college achievement--with the remainder of the students in each of the colleges and types of colleges in Minnesota.

Ability and High School Achievement

Previous research (Berdie and Hood, 1965) has indicated that fewer farm students attended college than students from other areas. It was therefore expected that when these farm students were compared with other students in college they would have higher high school achievement records and more ability as measured by a scholastic aptitude test than the typical college student from another background. In particular it was expected that they would have higher high school ranks, first, because their high school achievement would have to be higher for them to be encouraged to attend college and, second, because they tend to come from smaller high schools. Because they came from smaller schools it was expected that their high school achievement as measured by their rank in class would be a less valid predictor of college success than for students from other areas and therefore that scholastic aptitude test scores would be a more valid predictor of college success for students from farm backgrounds.

Significant differences were found in both high school percentile ranks and aptitude test scores between farm and nonfarm college students. The figures are shown in Table 13-1 for the total group of farm and nonfarm students. As expected, farm students have significantly higher mean high school percentile ranks than do nonfarm students. When scholastic aptitude test scores are examined, however, the situation is reversed. College students from farms obtained significantly lower scholastic aptitude test scores than did nonfarm students. When the college grade point averages achieved by farm and nonfarm students are examined, it is seen that farm students achieved a significantly higher grade point average than nonfarm students. Students from farms, therefore, lived up to their higher high school achievement records by achieving higher college grades than nonfarm students.

The mean scholastic aptitude test scores, the mean high school percentile ranks, and the mean grade point averages achieved in college are compared for farm and nonfarm students in each of the different types of

Table 13-1

A Comparison of Means and Standard Deviations of Farm and Nonfarm Students for Grade Point Average, High School Rank, and Minnesota Scholastic Aptitude Test Score

	Male			Female			Male and Female		
	Farm	Non-farm	Total	Farm	Non-farm	Total	Farm	Non-farm	Total
GPA Mean	2.05	1.95*	1.97	2.32	2.16*	2.19	2.15	2.01*	2.03
GPA Standard Deviation									.761
HSR Mean	66.66	61.38*	62.31	78.29	72.57*	73.66	72.00	66.24*	67.29
HSR Standard Deviation									24.24
MSAT Mean	36.71	38.06*	37.82	39.36	40.97*	40.66	37.93	39.31*	39.06
MSAT Standard Deviation									13.76
Number	783	3677	4460	665	2829	3494	1448	6506	7954

* Significant difference between farm and nonfarm

colleges in Minnesota in Table 13-2. Among the males, the mean scholastic aptitude test scores obtained by the nonfarm students were higher than those obtained by farm students in all colleges except the College of Liberal Arts at the University. This difference was significant only for men at the Private Liberal Arts Colleges. On the other hand farm students had higher mean high school percentile ranks in all types of colleges in the state, and this difference was significant in several of the groups. Farm men obtained higher grade point averages in college in each of the types of colleges except in the Private Liberal Arts Colleges, although the difference was significant only in the College of Agriculture. Among the girls, nonfarm girls obtained higher mean scholastic aptitude test scores in most of the different types of colleges. However, in all groups farm girls had achieved higher mean high school percentile ranks.

In all types of colleges and among students of both sexes then, students from farm backgrounds lived up to their slightly higher high school achievement by achieving higher grades in college.

Among men in the University's College of Agriculture, the difference in grade point average achieved by farm and nonfarm students is particularly large. Although this difference may in part be related to the higher high school achievement of the farm students, this difference does not appear to account for the total difference in college grade point average. The higher grade point average obtained by farm students might be explained by students from the farm having a better background in certain courses taken by the students in the College of Agriculture. Another explanation for this difference might be that students from farm backgrounds tend to take different curricula in the College of Agriculture than students from nonfarm backgrounds. Students from urban areas in the College of Agriculture tend to select curricula in forestry and not to take other agricultural curricula, such as dairy husbandry, horticulture, etc. Differences in grading practices among the different curricula might account for the difference in achievement levels.

As was mentioned in a previous chapter, relatively few students from farm backgrounds enter the University's College of Liberal Arts. The few students who do so tend to be superior in both measured ability and in high school achievement to the nonfarm students on this campus. It is interesting to note, however, that while farm students of both sexes in this college have achieved significantly higher high school ranks than the remainder of the students in that college, the grade point averages they achieve are only slightly higher than those achieved by the nonfarm students. Students from farm backgrounds in this college, then, do not appear to achieve grade point averages quite as high as might be expected from their previous achievement and test scores. While they seem to have a slight advantage in the College of Agriculture, they seem to be slightly handicapped in the College of Liberal Arts. Differences of these magnitudes are not found in other types of colleges.

Several possible explanations might be advanced for the higher achievement records in both high school and college and the lower scholastic aptitude test scores of college students from farm backgrounds. One explanation might be that because considerably fewer students from farms attend college than students from other backgrounds (Hood and Berdie, 1964) a farm student who attends college must, on the average, be considerably more motivated than his

Table 13-2

A Comparison of Means and Standard Deviations of Farm and Nonfarm Students by Groups for Grade Point Average, High School Rank, and Minnesota Scholastic Aptitude Test Score

	University of Minnesota						Private Liberal Arts Colleges	
	Agriculture		Institute of Technology		College of Liberal Arts			
	Farm	Non-Farm	Farm	Non-Farm	Farm	Non-Farm	Farm	Non-Farm
MALE								
GPA Mean	2.11	1.75*	2.03	1.95	2.14	1.93	2.15	2.19
HSR Mean	68.2	60.1*	84.2	80.7	81.9	70.9*	73.9	73.2
MSAT Mean	36.7	38.5	45.7	46.3	46.8	43.4	39.8	44.1*
FEMALE								
GPA Mean	2.36	2.19			2.29	2.13	2.43	2.36
HSR Mean	82.4	74.9*			89.1	79.1*	83.2	82.3
MSAT Mean	39.6	39.3			48.6	45.2*	41.9	45.4*
Male N	84	82	76	388	58	800	104	305
Female N	34	87	--	--	63	870	124	354

* Significant difference between farm and nonfarm

(Table 13-2 Continued)

	Catholic Colleges		Range Junior Colleges		Other Junior Colleges		State Colleges	
	Farm	Non-Farm	Farm	Non-Farm	Farm	Non-Farm	Farm	Non-Farm
MALE								
GPA Mean	2.23	2.07	2.05	2.01	2.00	1.87	1.98	1.90
HSR Mean	72.8	67.1	57.3	53.2	60.1	55.7	58.6	51.2*
MSAT Mean	40.3	42.3	32.6	34.6	35.2	34.0	31.8	31.9
FEMALE								
GPA Mean	2.65	2.60			2.41	2.30	2.41	2.19*
HSR Mean	80.6	76.1			69.4	67.1	76.1	67.4*
MSAT Mean	43.9	46.1			35.5	36.3	36.8	35.9
Male N	60	451	32	286	85	207	271	813
Female N	60	339	--	--	54	120	316	698

counterpart from the city. This additional motivation results in a higher record of achievement both in high school and in college for the student at a given ability level than is achieved by a similar student from the city.

The second explanation takes into consideration the fact that farm students obtain significantly lower scores on the Minnesota Scholastic Aptitude Test than do students from the towns and cities in the state (Hood and Berdie, 1964). This result may be caused by the fact that farm students have parents with considerably less formal education, have fewer books and magazines in their homes, and come from less affluent homes than students from other areas (Berdie and Hood, 1965). Their entire environment is perhaps less verbal and less language oriented. Students from farm backgrounds are, therefore, handicapped on the verbal portions of the typical scholastic aptitude test, but this handicap does not adversely affect their high school or college achievement. Whatever the reason may be, farm students are not handicapped by their slightly lower scholastic aptitude test scores.

It was hypothesized that there would be a higher relationship for farm students between scholastic aptitude test scores and college grades and a lower relationship between high school rank and college grades than for nonfarm students. The fact that farm students appear to achieve in college as would be expected from their high school rank and better than would be expected from their MSAT scores suggests that the before-mentioned hypothesis that MSAT scores would be more highly related to college achievement than high school rank has not been supported. Correlations between these two variables and college grade point average are compared in Table 13-3 for each of the types of colleges. It is seen in this table that there is essentially no difference in the relationship of either of these variables to college achievement between farm and nonfarm students. The correlations in Table 13-3 for both groups are very similar in all cases. Therefore, although farm students achieve slightly better grades than would be expected from their MSAT scores as compared with other students, the actual relationship between MSAT scores and college grades is the same for both farm and nonfarm students.

Socioeconomic Variables

A comparison of certain economic and cultural factors in the backgrounds of farm students indicates that, on the average, they come from significantly poorer cultural backgrounds than nonfarm students. Six of these variables are compared for students of both sexes for the entire state-wide population in Table 13-4. In Table 13-5 these comparisons are shown by college group. In Table 13-4 it can be seen that the educational level achieved by both parents of farm students is significantly less than that achieved by parents of nonfarm students. The differences are particularly large in the case of the father's education. On the average, the fathers of college students from farms had some high school training but did not graduate from high school, as compared with the fathers of nonfarm students, who on the average had some training beyond the high school diploma. This greater amount of education on the part of the fathers of nonfarm students was found to be significantly greater for both men and women who attended all of the types of colleges. In every case, fathers of nonfarm students had more education than those of students from the farm. The mothers of nonfarm

Table 13-3

A Comparison of Correlation Coefficients for the Total Sample of Students with Those for Farm Students Only by College Groups

	University of Minnesota															
	Agriculture		Institute of Technology		College of Liberal Arts		Private Liberal Arts Colleges		Catholic Colleges		Range Junior Colleges		Other Junior Colleges		State Colleges	
	Total	Farm	Total	Farm	Total	Farm	Total	Farm	Total	Farm	Total	Farm	Total	Farm	Total	Farm
MALE Variables Correlated with GPA																
HSR	.67	.67	.55	.52	.38	.40	.58	.48	.58	.46	.69	.73	.59	.51	.60	.55
MSAT	.39	.34	.39	.47	.30	.60	.43	.37	.40	.34	.44	.56	.38	.33	.43	.45
Multiple Correlation, HSR & MSAT	.68	.67	.58	.57	.43	.61	.60	.51	.60	.50	.69	.77	.60	.51	.61	.58
FEMALE Variables Correlated with GPA																
HSR	.68	.69			.35	.20	.58	.62	.61	.60			.58	.61	.69	.63
MSAT	.65	.61			.33	.49	.49	.49	.53	.58			.41	.43	.61	.59
Multiple Correlation, HSR & MSAT	.77	.75			.41	.49	.62	.64	.68	.72			.59	.63	.74	.70

Table 13-4

Comparison of Means of Students from Farm Backgrounds with Students from Nonfarm Backgrounds on Six Socioeconomic Variables for the Total Group Studied

	Male		Female	
Variable	Farm Mean	Nonfarm Mean	Farm Mean	Nonfarm Mean
Education of Father	4.02	5.40**	3.87	5.62**
Education of Mother	4.93	5.48**	4.97	5.56**
Adequacy of Income	3.52	3.79**	3.47	3.82**
Family Help with Expenses	2.70	2.72	2.42	2.30**
Number of Books	3.60	3.93**	3.62	3.94**
Family Feelings about College	1.97	1.86**	2.09	1.95**
Number	783	3677	665	2829

**Significant at .01 level

Table 13-5

Comparison of Means on Six Socioeconomic Variables, by College Groups

	University of Minnesota								Private Liberal Arts Colleges	
	Agriculture		General College		Institute of Technology		College of Liberal Arts			
Variable	Farm	Non-farm	Farm	Non-farm	Farm	Non-farm	Farm	Non-farm	Farm	Non-farm
MALE										
Education of Father	4.17	5.59**	4.29	5.23*	3.88	5.48**	4.05	5.92**	4.13	5.93**
Education of Mother	5.17	5.62	4.79	5.27	4.96	5.38*	4.77	5.65**	5.25	6.09**
Adequacy of Income	3.43	3.96**	3.79	3.84	3.55	3.75	3.63	3.82*	3.43	3.90**
Family Help with Expenses	2.80	2.66	2.43	2.77	2.83	2.82	2.82	2.73	2.88	2.60**
Number of Books	3.43	4.02**	3.79	3.89	3.76	4.01	3.74	4.20**	3.88	4.16*
Family Feelings About College	2.01	1.87	2.07	1.87	2.05	1.88*	2.02	1.84**	1.94	1.82**
FEMALE										
Education of Father	4.15	5.97**	3.33	6.01**	--	--	4.20	5.87**	4.02	5.95**
Education of Mother	4.79	5.69**	5.00	5.43	--	--	5.18	5.64	5.10	6.00**
Adequacy of Income	3.47	3.82	3.17	3.96	--	--	3.63	3.79	3.60	3.91**
Family Help with Expenses	2.47	2.37	2.17	2.06	--	--	2.43	2.42	2.35	2.13*
Number of Books	3.71	4.09	3.33	4.01	--	--	3.97	4.13	3.94	4.10
Family Feelings About College	2.12	1.98	2.17	1.92	--	--	2.02	1.97	2.06	1.88**
Male N	84	82	14	345	76	388	58	800	104	305
Female N	34	87	6	160	--	--	63	870	124	354

(Table 13-5 Continued)

Variable	Catholic Men's Colleges Farm	Catholic Men's Colleges Non-farm	Catholic Women's Colleges Farm	Catholic Women's Colleges Non-farm	Range Junior Colleges Farm	Range Junior Colleges Non-farm	Other Junior Colleges Farm	Other Junior Colleges Non-farm	State Colleges Farm	State Colleges Non-farm
MALE										
Education of Father	4.15	5.83**	--	--	3.72	4.94**	4.02	4.98**	3.81	4.98**
Education of Mother	4.98	5.67**	--	--	4.88	5.24	4.82	5.21	4.79	5.22**
Adequacy of Income	3.57	3.88**	--	--	3.44	3.70	3.39	3.76**	3.45	3.74**
Family Help with Expenses	2.63	2.69	--	--	2.47	2.64	2.73	2.72	2.74	2.73
Number of Books	3.22	4.18**	--	--	3.50	3.57	3.62	3.68	3.42	3.71**
Family Feelings About College	1.88	1.83	--	--	1.78	1.76	1.89	1.95	2.08	1.92**
FEMALE										
Education of Father	--	--	3.80	5.77**	3.55	4.97**	4.00	4.97**	3.92	5.05**
Education of Mother	--	--	5.08	5.67*	4.64	5.41	4.96	5.28	5.03	5.29*
Adequacy of Income	--	--	3.50	3.78*	3.64	3.76	3.31	3.72**	3.48	3.73**
Family Help with Expenses	--	--	2.52	2.36	2.45	2.17	2.48	2.48	2.50	2.41
Number of Books	--	--	3.92	4.04	3.18	3.62	3.48	3.67	3.43	3.78**
Family Feelings About College	--	--	2.20	1.94**	1.91	1.90	2.17	2.07	2.10	2.00**
Male N	60	451	--	--	32	286	85	207	271	813
Female N	--	--	60	339	11	201	54	120	316	698

* Significant at .05 level
** Significant at .01 level

students also had significantly more education than the mothers of students from farms. In addition to being significant for the total group, this difference was significant for both the men and the women in most, but not all, of the colleges.

Farm students who attend college indicate that their families are significantly less affluent than do nonfarm students. This difference was significant for both men and women in each of the types of private colleges but was not significantly different for certain of the types of publicly-supported colleges. With the exception of students attending the Private Liberal Arts Colleges, students from farm backgrounds felt their families would help them with their college expenses to the same extent as students from nonfarm backgrounds. We know that significantly fewer students who live on farms attend college than do students from other areas. We have also seen that college students from farms come from significantly less affluent families than do nonfarm students. This result indicates that for the group of farm students who do attend college, their families typically make greater sacrifices to help them with their college expenses than does the typical nonfarm family. Furthermore, since considerably fewer farm students can live at home and attend college as compared with other students, the average college expense of the farm student is probably greater than that of the nonfarm student. Again, this calls for a greater burden on the less affluent farm family.

College students from farm backgrounds also indicate they have significantly fewer books in the home than do nonfarm students. This difference was significant in some but not all of the different types of colleges and there was little difference between farm and nonfarm students on this index in the Junior Colleges.

Almost all students indicate that their parents either want them to attend college or insist that they go. Farm students, however, indicate that their parents feel less strongly about their attending college as compared with the parents of other students.

Personality Variables

The responses of college students from farm backgrounds to the various personality items on the questionnaire are compared with the responses of other students in Tables 13-6, 13-7, and 13-8. Table 13-6 compares the total group of students from farms with other college students. In this table, it is seen that responses of farm students to a number of the items from the Social Relations scale of the Minnesota Counseling Inventory differ significantly from other college men. Men from farm backgrounds respond positively significantly more often to such items as "I feel self-conscious when reciting in class," "I have difficulty in starting a conversation with a person who has just been introduced," "I am rather shy in contacts with people," "I wish I were not so shy," and "I stay in the background at parties or social gatherings." They tend to more often answer "false" to items such as "I meet strangers easily," "I feel at ease with people," "I enjoy entertaining people," "I like to meet new people," and "I find it easy to express my ideas." The total picture is that of college men from farm backgrounds indicating less social competence and less comfort in social

Table 13-6

A Comparison of Farm and Nonfarm Students on Answers to Personality Items for the Total Group

	Male		Female	
Personality Item	Farm %	Nonfarm %	Farm %	Nonfarm %
Meet Strangers Easily	66	76**	80	79
Sent to the Principal	25	24	6	5
Feel Self-Conscious Reciting	53	47**	50	52
Feel at Ease with People	75	81**	86	85
Wanted to Leave Home	27	29	37	31**
Difficulty Starting Conversation	52	39**	32	32
Can't Keep Mind on Job	27	22**	21	23
Enjoy Speaking Before Groups	24	24	35	26**
Know Who is Responsible	64	64	74	73
Shy in Contacts with People	40	29**	35	30**
Enjoy Entertaining People	50	61**	72	75
Like to Meet People	85	89*	95	95
Parents Find Fault with Me	17	14*	10	11
Easy to Express My Ideas	51	60**	51	49
Wish I Weren't So Shy	47	37**	35	35

(Table 13-6 Continued)

Personality Item	Male Farm %	Male Nonfarm %	Female Farm %	Female Nonfarm %
Avoid People	16	11**	8	7
Strange and Peculiar Experiences	27	32*	21	27**
Stay in Background at Parties	28	24*	22	15**
Close Friends Plan on College	77	87**	76	86**
Number	783	3677	665	2829

* Significant at .05 level

** Significant at .01 level

Table 13-7

A Comparison of Farm and Nonfarm Male Students on Answers to Personality Items for the College Groups

	University of Minnesota									
	Agriculture		General College		Institute of Technology		College of Liberal Arts		Private Liberal Arts	
Personality Item	Farm %	Non-farm %	Farm %	Non-farm %	Farm %	Non-farm %	Farm %	Non-farm %	Farm %	Non-farm %
Meet Strangers Easily	69	78	57	78	61	69	67	79*	76	79
Sent to Principal	17	17	29	34	11	19*	23	22	15	17
Feel Self-Conscious Reciting	51	51	79	55	47	47	35	42	40	41
Feel at Ease with People	73	78	64	81	76	77	77	86	79	82
Wanted to Leave Home	18	26	36	33	29	28	33	29	22	26
Difficulty Starting Conversation	49	36	50	34	55	43*	47	36	44	39
Can't Keep Mind on Job	21	18	14	26	9	18*	9	20*	18	24
Enjoy Speaking Before Groups	29	15*	14	17	24	19	39	35	33	34
Know Who Is Responsible	61	65	64	59	65	64	68	67	56	70*
Shy in Contacts with People	39	33	50	25	45	39	30	27	27	27
Enjoy Entertaining People	46	46	43	66	43	55	60	68	57	66
Like to Meet People	85	88	86	91	80	81	83	91	86	90
Parents Find Fault with Me	10	15	29	14	13	11	21	14	11	16
Easy to Express My Ideas	60	66	36	52	65	63	53	66*	57	66

(Table 13-7 Continued)

	University of Minnesota									
	Agriculture		General College		Institute of Technology		College of Liberal Arts		Private Liberal Arts	
Personality Item	Farm %	Non-farm %	Farm %	Non-farm %	Farm %	Non-farm %	Farm %	Non-farm %	Farm %	Non-farm %
Wish I Weren't So Shy	46	38	50	36	50	43	40	31	46	35*
Avoid People	11	15	21	10	17	12	14	10	12	8
Strange and Peculiar Experiences	23	29	21	35	20	25	25	31	32	28
Stay in Background at Parties	23	35	21	20	34	30	28	23	27	21
Close Friends Plan on College	69	82	71	81	72	90**	83	91	87	93
Number	84	82	14	345	76	388	57	800	104	305

* Significant at .05 level
** Significant at .01 level

(Table 13-7 Continued)

Personality Item	Catholic Men's Colleges Farm %	Catholic Men's Colleges Non-farm %	Range Junior Colleges Farm %	Range Junior Colleges Non-farm %	Other Junior Colleges Farm %	Other Junior Colleges Non-farm %	State Colleges Farm %	State Colleges Non-farm %
Meet Strangers Easily	72	72	59	76*	66	74	69	76*
Sent to Principal	33	25	44	30	24	27	31	29
Feel Self-Conscious Reciting	55	40*	63	53	58	49	52	52
Wanted to Leave Home	22	27	31	35	25	29	28	33
Feel at Ease with People	85	83	66	80	75	79	76	88**
Difficulty Starting Conversation	55	37**	63	39**	54	45	50	39**
Can't Keep Mind on Job	23	24	22	24	26	26	23	26
Enjoy Speaking Before Groups	25	32	16	18	9	21*	24	24
Know Who Is Responsible	68	64	63	63	71	64	58	63
Shy in Contacts with People	40	28	53	27**	40	30	35	27*
Enjoy Entertaining People	55	70*	38	55	53	54	56	64*
Like to Meet People	85	90	84	90	86	92	88	86
Parents Find Fault with Me	17	14	22	15	12	13	17	17
Easy to Express My Ideas	45	62*	44	56	52	52	53	53

(Table 13-7 Continued)

Personality Item	Catholic Men's Colleges Farm %	Catholic Men's Colleges Non-farm %	Range Junior Colleges Farm %	Range Junior Colleges Non-farm %	Other Junior Colleges Farm %	Other Junior Colleges Non-farm %	State Colleges Farm %	State Colleges Non-farm %
Wish I Weren't So Shy	47	37	53	41	48	39	45	35**
Avoid People	15	11	19	10	20	12*	13	12
Strange and Peculiar Experiences	38	32	34	41	22	32	31	35
Stay in Background at Parties	23	19	50	26**	24	29	21	20
Close Friends Plan on College	78	91**	75	86	78	86*	81	86*
Number	60	451	32	286	85	207	271	813

Table 13-8

A Comparison of Farm and Nonfarm Female Students on Answers to Personality Items for the College Groups

	University of Minnesota							
	Agriculture		General College		College of Liberal Arts		Private Liberal Arts	
Personality Item	Farm %	Non-farm %	Farm %	Non-farm %	Farm %	Non-farm %	Farm %	Non-farm %
Meet Strangers Easily	68	79	100	88	78	76	78	78
Sent to Principal	--	5*	17	11	5	5	4	3
Feel Self-Conscious Reciting	56	56	33	62	40	45	44	45
Feel at Ease with People	91	91	100	86*	78	85	89	86
Wanted to Leave Home	38	31	33	39	27	33	27	25
Difficulty Starting Conversation	24	32	17	28	28	29	34	34
Can't Keep Mind on Job	21	30	17	26	17	20	20	24
Enjoy Speaking Before Groups	27	30	83	19**	27	30	28	34
Know Who Is Responsible	79	77	67	68	72	72	73	78
Shy in Contacts with People	32	26	33	23	28	27	36	27*
Enjoy Entertaining People	74	83	100	81*	55	78**	78	77
Like to Meet People	94	98	100	98	93	95	94	93
Parents Find Fault with Me	6	10	--	14	12	9	10	12
Easy to Express My Ideas	56	49	67	43	58	55	49	54

(Table 13-8 Continued)

	University of Minnesota							
	Agriculture		General College		College of Liberal Arts		Private Liberal Arts	
Personality Item	Farm %	Non-farm %	Farm %	Non-farm %	Farm %	Non-farm %	Farm %	Non-farm %
Wish I Weren't So Shy	38	33	17	32	35	32	42	30**
Avoid People	12	8	--	7	13	6*	5	6
Strange and Peculiar Experiences	18	27	17	37	23	25	15	23*
Stay in Background at Parties	24	16	17	7	30	17*	21	18
Close Friends Plan on College	71	81	67	83	82	88	86	90
Number	34	87	6	160	60	870	124	354

* Significant at .05 level
** Significant at .01 level

(Table 13-8 Continued)

Personality Item	Catholic Women's Colleges Farm %	Catholic Women's Colleges Non-farm %	Range Junior Colleges Farm %	Range Junior Colleges Non-farm %	Other Junior Colleges Farm %	Other Junior Colleges Non-farm %	State Colleges Farm %	State Colleges Non-farm %
Meet Strangers Easily	73	82	100	78**	69	80	73	77
Sent to Principal	7	5	9	9	--	3	3	5
Feel Self-Conscious Reciting	48	43	64	54	65	53	48	52
Feel at Ease with People	77	84	100	86*	72	80	83	84
Wanted to Leave Home	35	31	82	33**	28	35	28	31
Difficulty Starting Conversation	47	27**	27	35	41	34	38	32*
Can't Keep Mind on Job	12	21*	45	22	13	22	20	25
Enjoy Speaking Before Groups	32	30	27	25	26	23	27	25
Know Who Is Responsible	77	79	100	77**	65	71	63	69*
Shy in Contacts with People	47	30*	9	34*	56	35**	35	29
Enjoy Entertaining People	65	73	91	70	48	72**	66	74*
Like to Meet People	95	96	100	95	91	97	91	94
Parents Find Fault with Me	12	10	--	11*	6	18*	9	12
Easy to Express My Ideas	57	54	27	54	43	40	49	46

(Table 13-8 Continued)

Personality Item	Catholic Women's Colleges Farm %	Catholic Women's Colleges Non-farm %	Range Junior Colleges Farm %	Range Junior Colleges Non-farm %	Other Junior Colleges Farm %	Other Junior Colleges Non-farm %	State Colleges Farm %	State Colleges Non-farm %
Wish I Weren't So Shy	43	30*	9	33	57	45	39	33*
Avoid People	8	10	9	8	7	63**	8	8
Strange and Peculiar Experiences	12	25*	46	28	19	26	20	28**
Stay in Background at Parties	33	20*	--	10*	33	16**	18	15
Close Friends Plan on College	80	85	73	86	74	88*	75	86**
Number	60	339	11	201	54	120	316	698

situations than other students from towns and cities. Certain of these differences were quite large. Fifty-two per cent of the farm students answered "true" to the item, "I have difficulty starting a conversation with a person who has just been introduced," as compared with 39 per cent of the other students, and 40 per cent of the farm students answered "true" to the item, "I am rather shy in contacts with people," as compared with 29 per cent of the other students.

Differences between the proportions of farm and nonfarm students answering each of these items were found among many of the types of colleges as shown in Table 13-7. However, because of the smaller numbers involved, many of these differences which were significant for the total group did not reach statistical significance in the smaller groups.

Few differences were found between college women from farm backgrounds and those from towns and cities. In the cases where differences were found, they were not always in the direction of less social competence for the farm girls. While significantly more farm girls indicated that they were "rather shy in contacts with people" and that they stayed "in the background at parties or social gatherings," significantly more of them said they enjoyed "speaking before groups of people," than did girls from other backgrounds. Few significant differences were found on the Social Relations items between farm and nonfarm girls in the type of college groups.

Few differences were found on the Conformity items between farm and nonfarm students of either sex. Significantly more farm students said that they found it "hard to keep my mind on a task or job," and more farm students said that "My parents and family find more fault with me than they should." Significantly more farm than nonfarm girls indicated that "At times I have very much wanted to leave home."

In summary, few differences were found between farm and nonfarm college students on the personality items dealing with conformity or among the Social Relations items among the women. Boys from farm backgrounds who attend college appear to have significantly less social skill and social need than students from other backgrounds. In a previous study (Berdie and Hood, 1965) high school students who lived on farms were found to have significantly less social competence and social need than students from other areas. That study also showed that significantly fewer girls from farm backgrounds attend college than do boys. A substantial proportion of able girls from farm backgrounds do not attend college. It may be that only the brighter, better socially-adjusted girls from the farm attend college, and this is the reason that they do not differ from students from other backgrounds. With a considerably higher proportion of farm boys attending college with a considerably larger range of ability, this factor of social competence may play a less important part in a boy's decision to attend college.

Summary

A previous study (Berdie and Hood, 1965) showed that farm students are less likely to attend college than students from other areas. Those students who do attend college from farm backgrounds have significantly higher achievement records than other students. These data indicate that these farm students who attend college also come from backgrounds where there is less parental education, fewer books in the home, and less pressure toward college attendance. These factors very likely result in the lower scholastic aptitude test scores obtained by farm students shown by this study. These factors, including the lower scholastic aptitude test scores, do not seem, in any way, to hamper the achievement of farm students in college as measured by the grades they receive in college courses. Men from farm backgrounds who attend college indicated less social competence and need than men from other areas, but this difference was not found for college women from farm backgrounds.

References

Berdie, R. F. and Hood, A. B. Decisions for Tomorrow: Plans of High School Graduates for After Graduation, University of Minnesota Press, Minneapolis, Minnesota, 1965.

Hood, A. B. and Berdie, R. F. The Relationship of Ability to College Attendance, College and University, Spring, 1964, 309-318.

Chapter 14

ACHIEVEMENT OF WORKING CLASS STUDENTS

One of the primary purposes of this investigation was to examine the college achievement in various types of colleges of students from different types of backgrounds and with certain personality characteristics. In this way, it could be determined if students with certain characteristics achieve better in some colleges than in others. The previous chapter examined students from farm backgrounds. This chapter will report on students from lower socioeconomic backgrounds--from families where the father is either an unskilled laborer or factory worker, or is a skilled tradesman.

Students who indicated on the questionnaire that their fathers were unskilled laborers or factory workers and those who indicated that their fathers were skilled tradesmen were placed in separate groups within the type of college they attended. In this chapter the term "factory worker" will include both the unskilled factory worker and the unskilled laborer. The mean grade point average, high school rank, MSAT score, and personality scores were found and the relationship of these variables to grade point average was computed. The means for each of the two socioeconomic groups were then compared with similar information for the total entering-freshman class for each type of college and the relationship between predictor variables and grade point average was also compared.

Academic Achievement of Students from Factory Worker Backgrounds

The college achievement of students from families of unskilled laborers as well as mean high school rank and mean MSAT score are compared with the total student body in each type of college in Minnesota in Table 14-1. Students in the University's College of Agriculture were not included in this analysis because of the small number of such students in that college. The data in Table 14-1 indicate that there were no consistent patterns of college achievement across the different college groups for such students of either sex.

Girls from this background did not differ significantly from other students in the average grade they received in college except in the Private Liberal Arts Colleges. They received a mean grade point average significantly lower than that for other Private Liberal Arts girls, although their high school ranks and aptitude test scores were essentially equal. For some reason this group of girls did not achieve the grades which would have been expected of them from these two predictors of college achievement.

The lack of a consistent pattern of achievement for boys from lower socioeconomic backgrounds can be seen by comparing the records of such students in two different colleges within the University. These boys in the College of Liberal Arts have a significantly higher high school rank but significantly lower MSAT score than other boys. The mean grade they receive is significantly

Table 14-1

Comparison of Means and Correlations of Students from Factory Worker Backgrounds with All Students at Various Colleges

MALE	University of Minnesota						Private Liberal Arts		Catholic Colleges (Men's)		Range Junior Colleges		Other Junior Colleges		State Colleges	
	GC		IT		SLA											
	F.W.	Total	F.W.	Total	F.W.	Total	F.W.	Total	F.W.	Total	F.W.	Total	F.W.	Total	F.W.	Total
GPA	1.79	1.84	1.98	1.96	1.78	1.93**	2.07	2.18	2.17	2.09	1.90	2.01*	1.73	1.91**	1.93	1.92
HSR	40.9	34.2**	75.6	81.3**	75.5	71.6**	73.9	73.4	74.3	67.8**	50.1	53.6*	51.3	57.0*	57.8	53.1*
Corr (w. GPA)	.47	.33	.30	.55	.44	.39	.53	.58	.55	.58	.67	.69	.65	.59	.57	.60
MSAT	23.3	25.0*	42.1	46.2**	41.6	43.6*	43.4	43.0	42.6	42.1	32.5	34.4*	31.2	34.4**	32.9	31.9
Corr (w. GPA)	.35	.19	.34	.39	.33	.31	.39	.43	.43	.40	.46	.44	.46	.38	.38	.43
Number	66	359	72	464	185	879	59	409	61	511	131	318	77	292	146	1084
FEMALE									(Women's)							
GPA	1.80	1.77			2.17	2.14	2.15	2.38*	2.49	2.61	2.42	2.48	2.36	2.33	2.21	2.26
HSR	38.9	36.3			78.9	79.7	83.5	82.5	75.2	76.8	69.2	70.5	73.2	67.8	69.7	70.1
Corr (w. GPA)	.58	.39			.32	.36	.55	.58	.61	.61	.63	.64	.50	.58	.67	.69
MSAT	24.5	25.5			44.4	45.4	45.8	44.5	42.7	45.8	37.0	39.1	37.8	36.1	35.7	36.2
Corr (w. GPA)	.38	.27			.44	.33	.37	.49	.44	.53	.58	.57	.37	.41	.72	.61
Number	22	166			175	957	44	478	43	399	81	212	26	174	98	1014

*Difference between factory worker group and total group significant at .05 level
**Difference between factory worker group and total group significant at .01 level

lower than for other students. Therefore they achieve essentially the grades which would be expected from their MSAT scores, but under-achieve from what would be predicted from their high school records. In the Institute of Technology, students from this background have lower high school ranks and lower MSAT scores than other students. However, their college achievement is the same as that of other students. The achievement record is therefore better than that which would be predicted from their MSAT scores and from their high school records. In the Catholic Men's Colleges and the State Colleges, these boys have significantly higher high school ranks but similar MSAT scores and receive a mean grade point average similar to that received by other students. Again, they are receiving the grades that would be expected from their MSAT scores but lower than that based on high school rank. There are no significant differences on any of these indices in the Private Liberal Arts Colleges. In the public Junior Colleges, both on the iron range and elsewhere, the relationship of college achievement to high school ranks and MSAT scores is similar to that of other students. Students from these backgrounds have lower high school ranks and lower MSAT scores and also receive lower grades than other students.

Except for the University's Institute of Technology, there is a tendency for boys from such backgrounds to have achieved higher grades in high school than other college students, but have MSAT scores lower than, or no higher than, other students. The grades they receive in college are not as high as would otherwise be predicted from their high school ranks.

Academic Achievement of Students from Skilled Trade Backgrounds

Students coming from families in which the father was a skilled tradesman are compared on college achievement, high school achievement, and MSAT scores in Table 14-2. Few differences were found between these students and the rest of the students in the different types of colleges on any of these indices. The pattern of achievement found in the College of Liberal Arts for boys from unskilled backgrounds is similar to the results shown here for boys from skilled trades backgrounds. They have similar high school ranks, lower MSAT scores, and also achieve a lower mean grade point average in college. Therefore the mean grade point average is what would be expected from MSAT score and lower than what would be expected from the mean high school rank. Men from skilled trades backgrounds achieved a significantly lower freshman year grade point average in the Private Liberal Arts Colleges. In the Range Junior Colleges they had a significantly higher high school rank than other students but obtained a mean GPA similar to other students.

Girls from skilled trades backgrounds had a significantly higher mean high school rank in the University's General College than other students, but in all other types of colleges, their MSAT scores, high school ranks, and mean freshman year grade point average were not significantly different from other students.

Except for a lower relationship between MSAT score and college achievement for men in the College of Liberal Arts, the relationship of high school rank and MSAT score to college achievement was essentially the same for students from unskilled worker and skilled trades backgrounds as it was for all students

Table 14-2

Comparison of Means and Correlations of Students from Skilled Trades Backgrounds with All Students at Various Colleges

MALE	University of Minnesota						Private Liberal Arts		Catholic Colleges (Men's)		Range Junior Colleges		Other Junior Colleges		State Colleges	
	GC		IT		SLA											
	S.T.	Total	S.T.	Total	S.T.	Total	S.T.	Total	S.T.	Total	S.T.	Total	S.T.	Total	S.T.	Total
GPA	1.81	1.84	1.87	1.96	1.80	1.93**	1.95	2.18**	2.03	2.09	2.07	2.01	1.94	1.91	1.86	1.92
HSR	35.0	34.2	80.9	81.3	71.2	71.6	71.9	73.4	68.9	67.8	58.2	53.6*	54.9	57.0 *	51.4	53.1
Corr (w. GPA)	.27	.33	.55	.55	.28	.39	.50	.58	.54	.58	.70	.69	.63	.59	.61	.60
MSAT	24.3	25.0	45.4	46.2	41.2	43.6**	41.8	43.0	41.0	42.1	35.4	34.4	34.0	34.4	30.8	31.9
Corr (w. GPA)	.18	.19	.35	.39	.15	.31	.26	.43	.36	.40	.35	.44	.44	.38	.44	.43
Number	140	359	135	464	182	879	93	409	106	511	122	318	57	292	258	1084
FEMALE									(Women's)							
GPA	1.83	1.77			2.09	2.14	2.40	2.38	2.57	2.61	2.52	2.48	2.28	2.33	2.26	2.26
HSR	41.8	36.3*			80.2	79.7	84.7	82.5	74.5	76.8	69.4	70.5	69.5	67.8	70.7	70.1
Corr (w. GPA)	.36	.39			.32	.36	.55	.58	.46	.61	.66	.64	.62	.58	.62	.69
MSAT	25.1	25.5			44.4	45.4	47.5	44.5	45.8	45.8	38.2	39.1	36.2	36.1	37.1	36.2
Corr (w. GPA)	.26	.27			.31	.33	.48	.49	.53	.53	.59	.57	.29	.41	.44	.61*
Number	48	166			227	957	119	478	82	399	79	212	51	174	212	1014

*Difference between skilled trades group and total group significant at .05 level
**Difference between skilled trades group and total group significant at .01 level

in that college. These indices predict grades as efficiently for students from these backgrounds as for other college students.

Personality--Factory Worker Backgrounds

Mean scores on certain personality items and scales as well as the correlation of each of these indices with grade point average are compared for students from laboring backgrounds and the total entering-freshman class at each type of institution in Tables 14-3 and 14-4. Few differences were found between students from this background and the total group on this item which asked if their high school grades were an accurate reflection of their ability.

In almost every type of institution, students from laboring backgrounds were more likely to say they would choose a low-paying, but secure job as compared with a high-paying, more risky one. The differences on this item were small and in only a few cases were they large enough to be significant. However, the direction of the difference is consistent among students of both sexes in almost all types of institutions. Students from laboring backgrounds, then, seem to be slightly more security-oriented and slightly less willing to take risks than other college students.

It had been predicted that students from laboring backgrounds would report less adequate social adjustment than other entering-college students. Students from laboring backgrounds who attend college would be expected to have values and attitudes quite different from those of most of their friends. These differences could easily lead to these college-bound students feeling somewhat less a part of the group of their peers and would, therefore, be more isolated and introverted. This prediction was not confirmed by the results of this analysis. Among the men, only in the University's College of Liberal Arts did students from unskilled laborer backgrounds report poorer social adjustment than other entering freshmen. Among girls from unskilled laborer backgrounds no differences were found on the Social Relations scale except in the Range Junior Colleges where this group of girls reported significantly better social adjustment.

It had been predicted that students from laboring backgrounds would be slightly more rebellious and nonconforming than other students and therefore obtain higher scores on the Conformity scale items. Students from this background would have attitudes and values somewhat different from the typical college student which would make them less conforming. Furthermore, these would be students who would not have the same lower social-class values as their parents and friends so that these students would have to be more rebelling to move away from their backgrounds by attendance at college. Mean scores shown in Tables 14-3 and 14-4 show that on the whole this was not the case. On the contrary, significant differences in the opposite direction were found for men in the University's General College, Institute of Technology, the Catholic Men's Colleges, and in the State Colleges. College males from such families appeared more responsible and more conforming than other students. Among men in other colleges differences were not significant but were in this direction. No significant differences on the Conformity scale were found for girls in any of the different types of colleges.

Table 14-3

Comparison of Means and Correlations of Males from Factory Worker Backgrounds with All Students at Various Colleges

	University of Minnesota						Private Liberal Arts		Catholic Colleges		Range Junior Colleges		Other Junior Colleges		State Colleges	
	GC		IT		SLA											
	F.W.	Total	F.W.	Total	F.W.	Total	F.W.	Total	F.W.	Total	F.W.	Total	F.W.	Total	F.W.	Total
Grades Reflect Ability	1.70	1.75	1.40	1.37	1.51	1.52	1.46	1.47	1.34	1.46*	1.64	1.61	1.62	1.60	1.60	1.62
Corr (w. GPA)	-.08	-.06	-.16	-.33	-.38	-.27	-.24	-.44	-.30	-.34	-.34	-.39	-.38	-.35	-.21	-.31
Risk-Taking	2.20	2.25	2.31	2.36	2.30	2.50**	2.22	2.30	2.30	2.36	1.93	2.03	1.96	2.17**	2.22	2.20
Corr (w. GPA)	+.12	+.05	-.02	+.02	-.15	+.01	+.18	-.04	+.01	+.07	-.06	+.09	-.15	-.06	+.05	+.02
Number	66	359	72	464	185	668	59	409	61	511	131	318	77	292	146	1084
SR	3.73	3.85	4.74	4.26	3.86	3.35**	3.29	3.44	3.39	3.47	3.98	4.15	4.40	4.24	4.00	3.88
Corr (w. GPA)	+.09	+.06	+.01	+.16	+.07	+.05	+.06	+.03	+.15	+.02	-.04	-.04	-.01	+.06	-.02	+.03
C	1.76	2.56**	2.14	1.93	2.14	2.06	1.86	2.03	1.57	2.26**	2.35	2.53	2.06	2.30	2.08	2.46**
Corr (w. GPA)	-.05	-.19	+.18	-.09*	-.10	+.02	+.08	-.20*	-.27	-.15	-.18	-.21	-.20	-.18	-.00	-.18*
Number	66	451	72	518	185	917	59	466	61	560	131	356	77	355	146	1315

*Difference between factory worker group and total group significant at .05 level
**Difference between factory worker group and total group significant at .01 level

Table 14-4

Comparison of Means and Correlations of Females from Factory Worker Backgrounds with All Students at Various Colleges

	University of Minnesota						Private Liberal Arts		Catholic Colleges		Range Junior Colleges		Other Junior Colleges		State Colleges	
	GC		IT		SLA											
	F.W.	Total	F.W.	Total	F.W.	Total	F.W.	Total	F.W.	Total	F.W.	Total	F.W.	Total	F.W.	Total
Grades Reflect Ability	1.36	1.66**			1.25	1.30	1.23	1.25	1.21	1.20	1.28	1.37*	1.23	1.39	1.35	1.32
Corr (w. GPA)	-.38	-.28			-.35	-.24	-.15	-.32	-.37	-.32	-.27	-.40	-.08	-.29	-.32	-.35
Risk-Taking	1.77	1.82			1.98	2.09*	1.77	1.93	1.95	2.02	1.64	1.90**	1.65	1.83	1.90	1.89
Corr (w. GPA)	+.14	-.00			+.18	+.10	+.21	-.01	+.16	+.08	-.00	+.04	-.12	-.07	+.08	+.07
Number	22	166			175	1123	44	478	43	399	81	212	26	174	98	1014
SR	3.00	3.07			2.98	3.13	2.91	3.21	3.77	3.37	2.98	3.52*	4.00	4.00	3.92	3.49
Corr (w. GPA)	+.23	-.01			+.08	+.08	+.19	+.10	-.09	+.01	+.07	+.07	-.11	+.03	+.15	+.07
C	1.82	2.36			1.67	1.67	1.45	1.56	1.81	1.65	1.65	1.87	1.69	2.01	1.89	1.88
Corr (w. GPA)	+.23	-.10			-.02	-.08	+.06	-.10	-.22	-.16	-.05	-.01	-.13	-.24	-.17	-.12
Number	22	207			175	968	44	531	43	463	81	252	26	227	98	1235

*Difference between factory worker group and total group significant at .05 level
**Difference between factory worker group and total group significant at .01 level

Personality--Skilled Trades Backgrounds

Mean scores on the personality items and scales for students from skilled trades backgrounds are similarly compared with all students at various types of colleges in Tables 14-5 and 14-6.

As with the students from laboring backgrounds, those from skilled trades backgrounds seldom differed from the total group of students in their responses to the item asking if their high school grades reflected their ability. Students from skilled trades backgrounds were less likely to say they would choose a low-paying, secure job than students from laboring backgrounds. In only a few types of institutions did the responses to this item by the skilled trades group differ from that of the total freshman group. Apparently, there is a tendency for students from farms and from lower socioeconomic backgrounds to choose the secure response and avoid those involving more risk than is the case for students from more affluent, higher socioeconomic backgrounds.

No differences were found in most types of institutions on scores from Social Relations scale items between students from skilled trades backgrounds and other students.

Again, like the unskilled worker group, the skilled trades group obtained significantly lower scores on the Conformity items in several types of colleges compared with other students. Again it appears that lower socioeconomic students who attend college tend to be less individualistic and more responsible than other students. Perhaps if they were not this way, other influences in their environment would tend to direct them in directions other than to college.

Summary

There was no consistent pattern of college achievement as related to predictor variables for students from lower socioeconomic backgrounds. The relationship of these variables to college achievement among students from skilled trades backgrounds was similar to that of the other students. Boys from unskilled worker backgrounds had slightly lower MSAT scores, slightly higher high school ranks, and obtained slightly lower grades in college than other students. These boys, then, achieved in college at a level which would have been expected from their MSAT scores, but under-achieved in relation to their high school grades.

Students from lower socioeconomic backgrounds said they were more likely to take a low-paying, but secure, job and less likely to take a high-paying, high risk job than other students. They responded to Social Relations items in a manner similar to other students, while for the Conformity scale items they reported more responsible, less individualistic behavior as compared with other entering freshmen.

Table 14-5

Comparison of Means and Correlations of Males from Skilled Trades Backgrounds with All Students at Various Colleges

	University of Minnesota						Private Liberal Arts		Catholic Colleges		Range Junior Colleges		Other Junior Colleges		State Colleges	
	GC		IT		SLA											
	S.T.	Total	S.T.	Total	S.T.	Total	S.T.	Total	S.T.	Total	S.T.	Total	S.T.	Total	S.T.	Total
Grades Reflect Ability	1.61	1.75**	1.31	1.37	1.53	1.52	1.49	1.47	1.49	1.46	1.57	1.61	1.60	1.60	1.64	1.62
Corr (w. GPA)	+.10	-.06	-.21	-.33	-.27	-.27	-.33	-.44	-.39	-.34	-.32	-.39	-.38	-.35	-.21	-.31
Risk-Taking	2.09	2.25**	2.19	2.36**	2.43	2.50	2.35	2.30	2.31	2.36	2.07	2.03	2.18	2.17	2.13	2.20
Corr (w. GPA)	-.02	+.05	-.01	+.02	+.01	+.01	+.01	-.04	-.05	+.07	+.13	+.09	-.16	-.06	+.02	+.02
Number	140	359	135	464	182	668	93	409	106	511	122	318	57	292	258	1084
SR	3.79	3.85	4.21	4.26	3.16	3.35*	3.33	3.44	3.14	3.47	3.84	4.15	3.84	4.24	3.63	3.88
Corr (w. GPA)	+.03	+.06	+.18	+.16	+.04	+.05	+.06	+.03	-.04	+.02	+.00	-.04	+.13	+.06	+.04	+.03
C	2.29	2.56*	1.65	1.93**	1.87	2.06*	1.75	2.03*	2.08	2.26	2.25	2.53*	2.02	2.30	2.30	2.46
Corr (w. GPA)	-.00	-.19	-.03	-.09	+.01	+.02	+.05	-.20*	+.04	-.15	-.14	-.21	-.28	-.18	-.17	-.18
Number	140	451	135	518	182	917	93	466	106	560	122	356	57	355	258	1315

*Difference between skilled trades group and total group significant at .05 level

**Difference between skilled trades group and total group significant at .01 level

Table 14-6

Comparison of Means and Correlations of Females from Skilled Trades Backgrounds with All Students at Various Colleges

	University of Minnesota						Private Liberal Arts		Catholic Colleges		Range Junior Colleges		Other Junior Colleges		State Colleges	
	GC		IT		SLA											
	S.T.	Total	S.T.	Total	S.T.	Total	S.T.	Total	S.T.	Total	S.T.	Total	S.T.	Total	S.T.	Total
Grades Reflect Ability	1.67	1.66			1.29	1.30	1.21	1.25	1.22	1.20	1.34	1.37	1.39	1.39	1.33	1.32
Corr (w. GPA)	-.22	-.28			-.19	-.24	-.25	-.32	-.28	-.32	-.35	-.40	-.45	-.29	-.27	-.35
Risk-Taking	1.73	1.82			2.03	2.09	1.88	1.93	1.79	2.02**	1.84	1.90	1.73	1.83	1.96	1.89
Corr (w. GPA)	+.09	-.00			+.09	+.10	+.11	-.01	+.17	+.08	+.12	+.04	+.05	-.07	+.04	+.07
Number	48	166			227	1123	119	478	82	399	79	212	51	174	212	1014
SR	3.25	3.07			3.26	3.13	3.89	3.21**	3.04	3.37	3.71	3.52	3.96	4.00	3.05	3.49
Corr (w. GPA)	+.08	-.01			+.05	+.08	-.11	+.10*	+.05	+.01	+.01	+.07	-.16	+.03	+.10	+.07
C	1.94	2.36			1.65	1.67	1.76	1.56	1.49	1.65	1.70	1.87	1.73	2.01	1.85	1.88
Corr (w. GPA)	+.20	-.10			-.20	-.08	-.10	-.10	-.03	-.16	-.04	-.01	-.40	-.24	-.12	-.12
Number	48	207			227	968	119	531	82	463	79	252	51	227	212	1235

*Difference between skilled trades group and total group significant at .05 level
**Difference between skilled trades group and total group significant at .01 level

Chapter 15

INTROVERTS IN COLLEGE

An additional method of examining the question of what types of students should attend what types of colleges is to pick groups of students with particular personality characteristics and examine their college achievement in various colleges. In this phase of the study, students who obtained high scores on the items from the Social Relations scale were drawn from the total group. Their achievement in college and other characteristics were compared with those of other students in each of the types of institutions.

The students drawn for study in this chapter included all males receiving a score of 7 or higher and all females obtaining a score of 6 or higher on the Social Relations items on the questionnaire. This yielded a sample of approximately one in five of the entering-college freshmen. These students answered the items in such a way to indicate that they were somewhat more introverted and somewhat less socially skilled than the other 80 per cent of the entering freshmen.

College Achievement

The total sample of students with high scores on the Social Relations scale (High SR) is compared with the total population of entering freshmen in Table 15-1. In Table 15-1 it is seen that High SR students of both sexes obtained approximately the same scores on the MSAT as did the total population. Among the males, the High SR students obtained approximately the same mean MSAT score, while High SR women received a slightly higher score on the MSAT than did the total group. High SR students of both sexes achieved significantly higher high school ranks than the total group and also received significantly higher grades in college. There was a tendency then for the shy and introverted student at a particular level of ability to achieve slightly better grades in both high school and college than his more sociable classmates.

High SR students are compared with the total entering-freshman classes in each of the different types of colleges in the state in Table 15-2. When both ability and college achievement are compared among the different types of institutions, High SR students seemed to do the best in the University's Institute of Technology and did least well in the Private Liberal Arts Colleges. In the Institute of Technology their MSAT was the same as other students, their high school rank was higher and their college GPA significantly higher than the total group. In Chapter 8 it was seen that boys in the University's Institute of Technology reported being more shy and less socially skilled than students in other four-year colleges. It appears from these figures that the socially introverted, less out-going boys in this college received significantly higher grades than other students.

Table 15-1

Comparison of Means of Students High on the Social Relations Scale[1] and All Students for Grade Point Average, High School Rank, and Minnesota Scholastic Aptitude Test Score

	Total Males			Total Females		
	High Social Relations	Total	Difference	High Social Relations	Total	Difference
GPA	2.03	1.97	+.06**	2.37	2.19	+.18**
HSR	64.10	62.31	+1.79**	76.16	73.66	+2.50**
MSAT	38.32	37.82	+.50	41.59	40.66	+.93*
Number	889	4460		787	3494	

[1] High Social Relations Scale = Males score of 7 or greater
Females score of 6 or greater

*Difference from state-wide college freshman mean of sex significant at .05 level
**Difference from state-wide college freshman mean of sex significant at .01 level

Table 15-2

Comparison of Means and Correlations of High Social Relations Students with All Students in Various Colleges

Male	University of Minnesota												Private Liberal Arts		
	Agric			GC			IT			SLA					
	H-SR	Total	Diff	H-SR	Total	Diff	H-SR	Total	Diff	H-SR	Total	Diff	H-SR	Total	Diff
GPA	2.26	1.89	.37**	1.91	1.84	+.07	2.10	1.96	+.14*	2.00	1.93	+.07	2.19	2.18	+.01
HSR	69.8	63.5	6.3*	36.2	34.2	+2.0	83.3	81.3	+2.0	73.6	71.6	+2.0	74.9	73.4	+1.5
Corr (w. GPA)	.62	.62		.53	.33		.51	.55		.27	.39		.49	.58	
MSAT	40.4	34.1	6.3**	24.8	25.0	-0.2	45.9	46.2	-0.3	44.0	43.6	+0.4	45.5	43.0	+2.5*
Corr (w. GPA)	.59	.39		.09	.19		.40	.39		.32	.31		.41	.43	
Number	44	229		73	359		111	464		141	879		97	409	
Female															
GPA	2.36	2.24	+.12	1.81	1.77	+.04				2.18	2.14	+.04	2.48	2.38	+.10*
HSR	79.2	77.0	+2.2	39.2	36.3	+2.9				80.8	79.7	+1.1	88.4	82.5	+5.9**
Corr (w. GPA)	.67	.68		.72	.39					.26	.36		.44	.58	
MSAT	40.6	39.4	+1.2	23.5	25.5	-2.0				45.4	45.4	0.0	49.3	44.5	+4.8**
Corr (w. GPA)	.75	.65		.04	.27					.27	.33		.35	.49	
Number	40	121		24	166					170	957		134	478	

*Difference of high social relations group from total group significant at .05 level
**Difference of high social relations group from total group significant at .01 level

(Table 15-2 Continued)

Male	Catholic Women's Colleges			Catholic Men's Colleges			Range Junior Colleges			Other Junior Colleges			State Colleges		
	H-SR	Total	Diff	H-SR	Total	Diff	H-SR	Total	Diff	H-SR	Total	Diff	H-SR	Total	Diff
GPA				2.09	2.09	.00	1.88	2.01	-.13	1.98	1.91	+.07	1.95	1.92	+.03
HSR				70.9	67.8	+3.1	49.1	53.6	-4.5	60.5	57.0	+3.5	53.7	53.1	+0.6
Corr (w. GPA)				.51	.58		.67	.69		.70	.59		.58	.60	
MSAT				43.2	42.1	+1.1	33.7	34.4	-0.7	33.8	34.4	-0.6	32.5	31.9	+0.6
Corr (w. GPA)				.29	.40		.55	.44		.42	.38		.47	.43	
Number				76	511		67	318		98	292		182	1084	
Female															
GPA	2.65	2.61	+.04				2.58	2.48	+.10	2.35	2.33	+.02	2.35	2.26	+.09*
HSR	76.5	76.8	-0.3				68.7	70.5	-1.8	64.7	67.8	-3.1	73.1	70.1	+3.0*
Corr (w. GPA)	.59	.61					.68	.64		.61	.58		.68	.69	
MSAT	45.2	45.8	-0.6				38.0	39.1	-1.1	35.1	36.1	-1.0	37.4	36.2	+1.2
Corr (w. GPA)	.62	.53					.51	.57		.47	.41		.54	.61	
Number	86	399					48	212		55	174		230	1014	

In the Private Liberal Arts Colleges, High SR males had a mean MSAT score that was significantly higher than that for the entire group, their high school rank was slightly higher, but their college grade point average was only equal to the rest of the students. In the University's College of Agriculture, High SR boys had higher MSAT scores, higher high school ranks, and achieved significantly higher college grades than other students. No other significant differences were found for these variables in the other types of colleges, although in most of them, there was a tendency for High SR males to have equal MSAT scores, but slightly higher high school ranks and college grade point averages.

Because of these results, a brief look was taken at the college achievement of a small group of particularly extroverted students. The pattern of college achievement of the extroverted students did not differ from that of other students except for males in the University's College of Agriculture and Institute of Technology. In these two colleges, extroverted males, with ability equal to other students, achieved significantly lower grades. In Chapter 8 it was seen that males in these two University colleges were considerably more introverted and less socially skilled than other students. Apparently it is only in these two colleges that the less sociable, more introverted men obtain higher grades. In other colleges any such relationship is much smaller.

Among High SR girls, those attending Private Liberal Arts Colleges had considerably higher MSAT scores and high school ranks than the remainder of the freshmen and also received significantly higher grades in college. Those attending State Colleges had slightly higher MSAT scores but significantly higher high school ranks and received significantly higher college grades. In most of the remaining types of colleges, High SR girls with equal MSAT scores and equal or slightly higher high school ranks than the total group, achieved equal or slightly higher grades than the total group.

Socioeconomic and Personality Variables

The High SR group was compared on certain other background variables and the total sample is compared with the total state-wide entering-freshman class in Table 15-3. High SR students are compared within the different types of colleges on the same variables in Tables 15-4 and 15-5. Results in Table 15-3 indicate that High SR students came from homes where the father had less formal education than fathers of other students. This difference was true for High SR students of both sexes. When this variable was examined in the different types of institutions, it appeared that this tendency for High SR students to have fathers less well educated is more often true for those in public rather than in private colleges. Although they came from families where the father was less well educated, the boys reported adequacy of income to be equal with that of the total group and High SR girls reported a significantly higher level of income. (Note that adequacy of income was the student's perception of how adequate family income was, not an actual income scale.) Large differences are found among the types of colleges on this item. High SR students attending the University and the liberal arts colleges in the state reported more adequate family income than the rest of the entering-freshman class. High SR students attending Junior or State Colleges reported less adequate income than did other freshmen.

Table 15-3

Comparison of Means of Students High on the Social Relations Scale[1] and All Students

	Total Males			Total Females		
	High Social Relations	Total	Difference	High Social Relations	Total	Difference
Education of Father	4.96	5.16	-.20**	5.04	5.29	-.25**
Education of Mother	5.27	5.38	-.11*	5.38	5.45	-.07
Adequacy of Income	3.70	3.74	-.04	3.80	3.75	+.05*
Number	889	4460		787	3494	
Grades Reflect Ability	1.51	1.55	-.04**	1.27	1.31	-.04**
Risk-Taking	2.16	2.28	-.12**	1.85	1.97	-.12**
Number	889	4328		787	3687	

[1] High Social Relations Scale = Males score of 7 or greater
Females score of 6 or greater

*Difference from state-wide college freshman mean of sex significant at .05 level
**Difference from state-wide college freshman mean of sex significant at .01 level

Table 15-4

Comparison of Means and Correlations of High Social Relations Students with All Students in Various Colleges

Male	University of Minnesota												Private Liberal Arts		
	Agric			GC			IT			SLA					
	H-SR	Total	Diff	H-SR	Total	Diff	H-SR	Total	Diff	H-SR	Total	Diff	H-SR	Total	Diff
Fath Ed	5.05	4.86	+.19	4.73	5.19	-.46*	4.74	5.22	-.48**	5.65	5.79	-.14	5.59	5.47	+.12
Corr (w. GPA)	.10	-.05		.06	.01		.13	.01		.05	.07		-.02	.03	
Moth Ed	5.48	5.41	+.07	4.84	5.25	-.41**	5.15	5.31	-.16	5.48	5.58	-.10	5.71	5.88	-.17
Corr (w. GPA)	.00	-.01		-.06	-.12		.08	.04		.06	.13		.07	.04	
Adeq of Inc	3.80	3.66	+.14	3.73	3.84	-.11	3.76	3.72	+.04	4.07	3.81	+.26**	4.04	3.78	+.26**
Corr (w. GPA)	.17	-.04		-.05	-.02		.04	-.05		-.11	-.01		-.06	-.09	
Number	44	229		73	359		111	464		141	879		97	409	
Female															
Fath Ed	5.18	5.46	-.28	6.58	5.91	-.33				5.42	5.78	-.36**	5.59	5.45	+.14
Corr (w. GPA)	-.12	-.05		-.45	.03*					.13	.03		.26	.03*	
Moth Ed	5.40	5.44	-.04	5.33	5.41	-.08				5.40	5.61	-.21*	5.96	5.77	+.19
Corr (w. GPA)	-.07	-.01		.13	.09					.19	.08		.24	.03**	
Adeq of Inc	3.85	3.72	+.13	4.21	3.93	+.28				4.07	3.78	+.29**	4.06	3.83	+.23**
Corr (w. GPA)	.05	.09		-.14	-.16					.10	.02		.11	-.09*	
Number	40	121		24	166					170	957		134	478	

(Table 15-4 Continued)

Male	Catholic Women's Colleges			Catholic Men's Colleges			Range Junior Colleges			Other Junior Colleges			State Colleges		
	H-SR	Total	Diff	H-SR	Total	Diff	H-SR	Total	Diff	H-SR	Total	Diff	H-SR	Total	Diff
Fath Ed				5.88	5.63	+.25	4.78	4.82	-.04	4.43	4.70	-.27*	4.25	4.69	-.44**
Corr (w. GPA)				-.07	-.10		.02	.16		.03	.02		.07	-.05	
Moth Ed				5.80	5.59	+.21	5.30	5.20	+.10	4.97	5.10	-.13	4.98	5.11	-.13
Corr (w. GPA)				-.10	-.08		.15	.17		.12	.08		.08	-.01	
Adeq of Inc				4.01	3.84	+.17*	3.34	3.67	-.33**	3.47	3.65	-.18**	3.30	3.67	-.37**
Corr (w. GPA)				.05	-.12		-.03	-.08		.04	.03		.01	-.10	
Number				76	511		67	318		98	292		182	1084	
Female															
Fath Ed	5.03	5.47	-.44*				5.00	4.90	+.10	4.38	4.67	-.29	4.41	4.70	-.29**
Corr (w. GPA)	-.06	-.01					.04	.15		.08	.03		-.03	-.05	
Moth Ed	5.72	5.58	+.14				5.15	5.37	-.22	4.82	5.18	-.36	5.09	5.21	-.12
Corr (w. GPA)	-.09	-.02					.09	.08		.01	.10		-.05	-.01	
Adeq of Inc	3.84	3.74	+.10				3.56	3.75	-.19*	3.07	3.59	-.52**	3.61	3.65	-.04
Corr (w. GPA)	-.25	-.07					.26	-.03		.15	-.04		-.00	-.11	
Number	86	399					48	212		55	174		230	1014	

Table 15-5

Comparison of Means and Correlations of High Social Relations Students with All Students in Various Colleges

	University of Minnesota												Private Liberal Arts		
Male	Agric			GC			IT			SLA					
	H-SR	Total	Diff	H-SR	Total	Diff	H-SR	Total	Diff	H-SR	Total	Diff	H-SR	Total	Diff
Grades Reflect	1.45	1.47	-.02	1.64	1.75	-.11*	1.34	1.37	-.03	1.48	1.52	-.04	1.47	1.47	.00
Corr (w. GPA)	-.45	-.39		-.24	-.06		-.38	-.33		-.19	-.27		-.44	-.44	
Risk Taking	2.00	2.14	-.14	2.16	2.25	-.09	2.30	2.36	-.06	2.35	2.50	-.15**	2.27	2.30	-.03
Corr (w. GPA)	.03	-.09		.12	.05		-.02	.02		-.03	.01		-.03	-.04	
Number	44	223		73	359		111	464		141	668		97	409	
Female															
Grades Reflect	1.33	1.29	+.04	1.58	1.66	-.08				1.26	1.30	-.04	1.19	1.25	-.06
Corr (w. GPA)	-.49	-.37		-.38	-.28					-.18	-.24		-.16	-.32	
Risk Taking	1.83	1.98	-.15	1.83	1.82	+.01				1.99	2.09	-.10*	1.89	1.93	-.04
Corr (w. GPA)	.18	.17		-.26	-.00					.18	.10		.07	-.01	
Number	40	121		24	166					170	1123		134	478	

(Table 15-5 Continued)

Male	Catholic Women's Colleges			Catholic Men's Colleges			Range Junior Colleges			Other Junior Colleges			State Colleges		
	H-SR	Total	Diff	H-SR	Total	Diff	H-SR	Total	Diff	H-SR	Total	Diff	H-SR	Total	Diff
Grades															
Reflect				1.33	1.46	-.13*	1.58	1.61	-.03	1.58	1.60	-.02	1.64	1.62	+.02
Corr (w. GPA)				-.29	-.34		-.38	-.39		-.43	-.35		-.28	-.31	
Risk-Taking				2.14	2.36	-.22**	2.00	2.03	-.03	1.91	2.17	-.26**	2.09	2.20	-.11*
Corr (w. GPA)				.14	.07		.06	.09		.04	-.06		.26	.02**	
Number				76	511		67	318		98	292		182	1084	
Female															
Grades															
Reflect	1.19	1.20	-.01				1.31	1.37	-.06	1.33	1.39	-.06	1.29	1.32	-.03
Corr (w. GPA)	-.25	-.32					-.36	-.40		-.24	-.29		-.35	-.35	
Risk-Taking	1.83	2.02	-.19**				1.92	1.90	+.02	1.67	1.83	-.16*	1.77	1.89	-.12**
Corr (w. GPA)	.04	.08					.04	.04		.13	-.07		.01	.07	
Number	86	399					48	212		55	174		230	1014	

High SR students more often reported that they felt that their high school grades were an adequate reflection of their ability than did other students. Since they achieved slightly higher high school grades, on the average, than would be expected from their scholastic aptitude test scores, their grades probably were slightly more indicative of their ability than were the grades of other students. High SR students of both sexes also indicated they would be more willing to take a secure, low-paying job than other students and less likely to gamble on one which pays better but requires more risk.

Summary

Introverted, less socially out-going students achieved higher grades in college than would be expected from their scholastic aptitude test scores. They also achieved higher grades in high school. In college, they lived up to their higher high school records by achieving higher grades in college and by over-achieving as compared with scholastic aptitude test scores. At a given level of ability, an introverted student was most likely to over-achieve in the University's Institute of Technology and least likely to over-achieve in one of the Private Liberal Arts Colleges. Introverted college students tended to come from homes where the father had less formal education but an equal or higher income level as compared with other freshmen. There was evidence that these less socially skilled students may be more cautious and conservative about taking risks than other students.

Chapter 16

REBELLIOUS STUDENTS IN COLLEGE

Students with high scores on the Conformity scale of the Minnesota Counseling Inventory tend to be irresponsible, rebellious, and self-centered. In order to study the academic achievement of the more rebellious and impulsive student, males with a score of 4 or greater and females with a score of 3 or greater on the Conformity items on the questionnaire were compared with the total freshman class on a number of variables. These cut-off scores yielded approximately one out of four students. Therefore the groups studied here could by no means be considered rebellious "beatnik" groups. A typical student in this sample was only slightly more impulsive or individualistic than the average college student.

Achievement in College

The total sample of high conformity students is compared with the total population of entering freshmen in Table 16-1. (It is important to remember that "High Conformity" indicates "high" on the Conformity scale, a high degree of non-conformity.) Students scoring high on the Conformity scale obtained the same scores on the Minnesota Scholastic Aptitude Test as did other students. Their high school record, however, was considerably below that of other students. The grades they achieved in college were also significantly lower than those achieved by other students. These differences in both high school and college grades were considerably greater for the High Conformity men than for the High Conformity women. Apparently non-conforming men behave in a way that is considerably more detrimental to academic grades than do non-conforming women.

These results are in line with those which have shown patterns of elevations on the Psychopathic Deviate and Manic scales of the Minnesota Multiphasic Personality Inventory to be related to low college grades. The lower grades of the High Conformity males very clearly indicate a relationship between a type of personality characteristic and college grades. The 13 items do not explore this personality variable adequately. Further research in this area on the relationship of personality to achievement should prove fruitful. Such research should also examine the actual behavior resulting from these personality characteristics that cause lower college achievement.

When the grade point averages of the High Conformity students were examined in the different types of institutions the pattern remained the same (Table 16-2). As compared with other freshman students in each type of institution, High Conformity students had equal ability but lower high school ranks and lower college grade point averages. When the patterns of achievement for High Conformity students were compared among the different types of institutions, it appeared that High Conformity males under-achieved the least in the University's Institute of Technology and College of Liberal Arts. Among girls the differences in pattern of achievement between types of colleges were less clear.

Table 16-1

Comparison of Means of Students High on the Conformity Scale[1] and All Students for Grade Point Average, High School Rank, and Minnesota Scholastic Aptitude Test Score

	Total Males			Total Females		
	High Conformity	Total	Difference	High Conformity	Total	Difference
GPA	1.74	1.97	-.23**	2.14	2.19	-.05**
HSR	55.36	62.31	-6.95**	70.01	73.66	-3.65**
MSAT	37.27	37.82	-.55	40.29	40.66	-.37
Number	1120	4460		1228	3494	

[1] High Conformity Scale = Males score of 4 or greater
Females score of 3 or greater

*Difference from state-wide college freshman mean of sex significant at .05 level
**Difference from state-wide college freshman mean of sex significant at .01 level

Table 16-2

Comparison of Means and Correlations of High Conformity Students with All Students in Various Colleges

Male	University of Minnesota												Private Liberal Arts		
	Agric			GC			IT			SLA					
	H.C.	Total	Diff	H.C.	Total	Diff	H.C.	Total	Diff	H.C.	Total	Diff	H.C.	Total	Diff
GPA	1.72	1.89	-.17	1.62	1.84	-.22**	1.88	1.96	-.08	1.80	1.93	-.07	1.91	2.18	-.27**
HSR	60.2	63.5	-3.3	30.6	34.2	-3.6*	76.3	81.3	-5.0**	66.0	71.6	-5.6**	69.4	73.4	-4.0*
Corr (w. GPA)	.67	.62		.46	.33		.42	.55		.38	.39		.56	.58	
MSAT	34.1	36.2	-2.1	24.9	25.0	-.1	47.5	46.2	+1.3	44.0	43.6	+.4	42.2	43.0	-.8
Corr (w. GPA)	.59	.39		.17	.19		.08	.39*		.22	.31		.45	.43	
Number	32	229		101	359		71	464		289	879		90	409	
Female															
GPA	1.88	2.24	-.36**	1.67	1.77	-.10				2.07	2.14	-.07*	2.32	2.38	-.06
HSR	66.5	77.0	-10.5**	33.9	36.3	-2.4				77.3	79.7	-2.4**	81.5	82.5	-1.0
Corr (w. GPA)	.77	.68		.49	.39					.44	.36		.48	.58	
MSAT	37.0	39.4	-2.4	24.7	25.5	- .8				45.4	45.4	0.0	45.5	44.5	+1.0
Corr (w. GPA)	.73	.65		.26	.27					.39	.33		.34	.49	
Number	29	121		72	166					417	957		166	478	

*Difference of high conformity group from total group significant at .05 level

**Difference of high conformity group from total group significant at .01 level

(Table 16-2 Continued)

Male	Catholic Women's Colleges			Catholic Men's Colleges			Range Junior Colleges			Other Junior Colleges			State Colleges		
	H.C.	Total	Diff	H.C.	Total	Diff	H.C.	Total	Diff	H.C.	Total	Diff	H.C.	Total	Diff
GPA				1.83	2.09	-.26**	1.70	2.01	-.31**	1.72	1.91	-.19*	1.64	1.92	-.28**
HSR				61.1	67.8	-6.7**	44.6	53.6	-9.0**	50.9	57.0	-6.1*	45.6	53.1	-7.5**
Corr (w. GPA)				.54	.58		.54	.69		.50	.59		.58	.60	
MSAT				40.6	42.1	-1.5	33.1	34.4	-1.3	35.0	34.4	+0.6	31.8	31.9	-0.1
Corr (w. GPA)				.43	.40		.23	.44		.30	.38		.44	.43	
Number				99	511		88	318		59	292		291	1084	
Female															
GPA	2.47	2.61	-.14**				2.41	2.48	-.07	2.08	2.33	-.25**	2.12	2.26	-.14**
HSR	74.0	76.8	-2.8				65.0	70.5	-5.5*	59.6	67.8	-8.2**	64.9	70.1	-5.2**
Corr (w. GPA)	.64	.61					.68	.64		.47	.58		.69	.69	
MSAT	45.1	45.8	-0.7				39.2	39.1	+0.1	33.5	36.1	-2.6*	34.6	36.2	-1.6**
Corr (w. GPA)	.54	.53					.66	.57		.26	.41		.57	.61	
Number	96	399					58	212		65	174		325	1014	

Socioeconomic and Personality Variables

The total sample of High Conformity students is compared with the statewide population of entering freshmen on a number of variables in Table 16-3. High Conformity (HC) students are compared within different types of colleges on these variables in Tables 16-4 and 16-5. In Table 16-3 it is seen that as compared with other freshmen, the more non-conforming and rebellious students of both sexes tended to come from more affluent homes. When this variable is compared among the types of colleges in Table 16-4, it is seen that this difference held only for the four-year colleges at the University and for the other private colleges. Such a difference was not found at the State and Junior Colleges. In Table 16-3 it is seen that there was a significant tendency for High Conformity girls to come from families where the father had more formal education. High Conformity males, on the other hand, tended to come from families where the mother had more education. These differences in parental education between the sexes lead to interesting speculations regarding the development of rebellious and irresponsible behavior in young people. These differences in parental education did not appear consistently throughout the types of colleges. For example, in the University's Institute of Technology, the fathers of High Conformity boys had significantly more formal education than did the fathers of other students.

The non-conforming, less responsible students felt that their grades in high school less often reflected their abilities as compared with other college freshmen. It was seen in Table 16-1 that this perception tends to be an accurate one--their high school rank is significantly lower than what would be expected from their levels of ability at least as measured by the MSAT. These more individualistic, more impulsive students also reported that they would be more willing to take a job with little security, but high salary, than other students. Responses to this item are definitely in line with what would be expected of students with high scores on the Conformity scale.

Summary

In the more expensive colleges--the University and the private colleges--non-conforming, rebellious students more often came from affluent homes than did the typical entering freshman. If the rebellious student was a girl, her father was likely to have had more than an average amount of formal education. If the rebellious student was a boy, it was his mother who had had more education. Although the non-conforming college student had as much tested ability as did other students, both his grades in high school and his grades in college tended to run considerably below those of other students.

There was some evidence to suggest that the non-conforming, rebellious student attending the University's Institute of Technology or College of Liberal Arts was less likely to carry over his record of under-achievement to the college level than he was if he attended other types of institutions. Perhaps in a large, heterogeneous university there is either less to rebel against, or university professors are more acceptant of certain kinds of behavior, or whatever behavior is detrimental to grades is less often practiced or less often identified. In any event, such students appear to achieve more in line with their ability at the University than at other colleges.

Table 16-3

Comparison of Means of Students High on the Conformity Scale[1] and All Students

	Total Males			Total Females		
	High Conformity	Total	Difference	High Conformity	Total	Difference
Education of Father	5.20	5.16	+.04	5.44	5.29	+.15**
Education of Mother	5.47	5.38	+.09*	5.48	5.45	+.03
Adequacy of Income	3.93	3.74	+.19**	3.93	3.75	+.18**
Number	1120	4460		1228	3494	
Grades Reflect Ability	1.73	1.55	+.18**	1.42	1.31	+.11**
Risk-Taking	2.37	2.28	+.09**	2.02	1.97	+.05**
Number	1120	4328		1228	3687	

[1] High Conformity Scale = Males score of 4 or greater
Females score of 3 or greater

*Difference from state-wide college freshman mean of sex significant at .05 level
**Difference from state-wide college freshman mean of sex significant at .01 level

Table 16-4

Comparison of Means and Correlations of High Conformity Students with All Students in Various Colleges

	University of Minnesota												Private Liberal Arts		
Male	Agric			GC			IT			SLA					
	H.C.	Total	Diff	H.C.	Total	Diff	H.C.	Total	Diff	H.C.	Total	Diff	H.C.	Total	Diff
Fath Ed	4.69	4.86	-.17	5.30	5.19	+.11	5.66	5.22	+.44*	5.60	5.79	-.19*	5.98	5.47	+.51**
Corr (w. GPA)	-.14	-.05		.03	.01		.16	.01		.10	.06		-.02	.03	
Moth Ed	5.13	5.41	-.28	5.23	5.25	-.02	5.59	5.31	+.28	5.63	5.58	+.05	6.11	5.88	+.23
Corr (w. GPA)	.14	-.01		-.15	-.12		.18	.04		.20	.13		.17	.04	
Adeq of Inc	3.69	3.66	+.03	3.83	3.84	-.01	4.23	3.72	+.51**	4.28	3.81	.47**	4.07	3.78	+.29**
Corr (w. GPA)	.22	-.04		-.04	-.02		.20	-.05		.08	-.01		-.12	-.09	
Number	32	229		101	359		71	464		289	879		90	409	
Female															
Fath Ed	5.59	5.46	+.13	5.90	5.91	-.01				5.94	5.78	+.16*	5.54	5.45	+.09
Corr (w. GPA)	-.33	-.05		.03	.03					.06	.02		.12	.03	
Moth Ed	5.83	5.44	+.39	5.49	5.41	+.08				5.62	5.61	+.01	5.76	5.77	-.01
Corr (w. GPA)	.16	-.01		.08	.09					.04	.08		.11	.03	
Adeq of Inc	4.24	3.72	+.52**	3.92	3.93	-.01				4.16	3.78	+.38**	4.12	3.83	+.29**
Corr (w. GPA)	.04	.09		-.17	-.16					.09	.02		.11	-.09*	
Number	29	121		72	166					417	957		166	478	

(Table 16-4 Continued)

Male	Catholic Women's Colleges			Catholic Men's Colleges			Range Junior Colleges			Other Junior Colleges			State Colleges		
	H.C.	Total	Diff	H.C.	Total	Diff	H.C.	Total	Diff	H.C.	Total	Diff	H.C.	Total	Diff
Fath Ed				5.67	5.63	+.04	4.72	4.82	-.10	4.76	4.70	+.06	4.55	4.69	-.14
Corr (w. GPA)				-.15	-.10		.10	.16		.09	.02		-.07	-.05	
Moth Ed				5.76	5.59	+.17	5.24	5.20	+.04	5.63	5.10	+.53**	5.13	5.11	-.02
Corr (w. GPA)				.03	-.08		.30	.17		.28	.08		.05	-.01	
Adeq of Inc				4.07	3.84	+.23**	3.63	3.67	-.04	3.66	3.65	+.01	3.63	3.67	-.04
Corr (w. GPA)				.16	-.12*		.01	-.08		.07	.03		-.07	-.10	
Number				99	511		88	318		59	292		291	1084	
Female															
Fath Ed	5.49	5.47	+.02				4.98	4.90	+.08	4.42	4.67	-.25	4.88	4.70	+.18*
Corr (w. GPA)	-.06	-.01					.35	.15		-.16	.03		-.05	-.05	
Moth Ed	5.65	5.58	+.07				5.31	5.37	-.06	5.23	5.18	+.05	5.17	5.21	-.04
Corr (w. GPA)	-.02	-.02					.13	.08		.06	.10		-.07	-.01	
Adeq of Inc	3.94	3.74	+.20**				3.47	3.75	-.28**	3.65	3.59	+.06	3.63	3.65	-.02
Corr (w. GPA)	-.12	-.07					.00	-.03		-.25	-.04		-.01	-.11	
Number	96	399					58	212		65	174		325	1014	

Table 16-5

Comparison of Means and Correlations of High Conformity Students with All Students in Various Colleges

Male	University of Minnesota												Private Liberal Arts		
	Agric			GC			IT			SLA					
	H.C.	Total	Diff	H.C.	Total	Diff	H.C.	Total	Diff	H.C.	Total	Diff	H.C.	Total	Diff
Item 47	1.63	1.47	+.16	1.81	1.75	+.06	1.65	1.37	+.28**	1.69	1.52	+.17**	1.71	1.47	+.24**
Corr (w. GPA)	-.27	-.39		-.13	-.06		-.07	-.33*		-.27	-.27		-.30	-.44	
Item 49	2.16	2.14	+.02	2.20	2.25	-.05	2.56	2.36	+.20**	2.57	2.50	+.07*	2.48	2.30	+.18**
Corr (w. GPA)	.10	-.09		.15	.05		.01	.02		.11	.01		.23	-.04*	
Number	32	223		101	359		71	464		289	668		90	409	
Female															
Item 47	1.48	1.29	+.19*	1.68	1.66	+.02				1.42	1.30	+.12**	1.34	1.25	+.09**
Corr (w. GPA)	-.37	-.37		-.25	-.28					-.27	-.24		-.25	-.32	
Item 49	2.14	1.98	+.16	1.81	1.82	-.01				2.13	2.09	+.04	2.11	1.93	+.18**
Corr (w. GPA)	-.03	.17		-.13	-.00					.20	.10		.03	-.01	
Number	29	121		72	166					417	1123		166	478	

(Table 16-5 Continued)

Male	Catholic Women's Colleges			Catholic Men's Colleges			Range Junior Colleges			Other Junior Colleges			State Colleges		
	H.C.	Total	Diff	H.C.	Total	Diff	H.C.	Total	Diff	H.C.	Total	Diff	H.C.	Total	Diff
Item 47				1.61	1.46	+.15**	1.81	1.61	+.20**	1.75	1.60	+.15**	1.78	1.62	+.16**
Corr (w. GPA)				-.29	-.34		-.24	-.39		-.21	-.35		-.17	-.31*	
Item 49				2.33	2.36	-.03	2.11	2.03	+.08	2.34	2.17	+.17*	2.27	2.20	+.07*
Corr (w. GPA)				-.07	.07		.00	.09		-.20	-.06		.07	.02	
Number				99	511		88	318		59	292		291	1084	
Female															
Item 47	1.31	1.20	+.11**				1.47	1.37	+.10	1.48	1.39	+.09	1.42	1.32	+.10**
Corr (w. GPA)	-.52	-.32					-.43	-.40		-.15	-.29		-.28	-.35	
Item 49	2.05	2.02	+.03				2.07	1.90	+.17	1.74	1.83	-.09	1.89	1.89	.00
Corr (w. GPA)	-.06	.08					.19	.04		-.32	-.07		.04	.07	
Number	96	399					58	212		65	174		325	1014	

Chapter 17

MY GRADES REFLECT MY ABILITY?

Among the items on the questionnaire, there was one which unexpectedly showed significant relationships again and again in various types of analyses. This was item number 47 which asked:

> "Would you say that your high school grades are a fairly accurate reflection of your ability?
>
> 1._____Yes 2._____No"

Because of such relationships, several further studies were conducted on this item. These will be reported in this chapter in addition to results of the more typical analyses which have been reported for the rest of the questionnaire items in the previous chapters (see Chapters 10 and 11).

Differences among Types of Institutions

Large differences were found among the different types of colleges in the proportions of entering freshmen responding positively and negatively to this item. These proportions are shown in Table 17-1. There was a large difference between the sexes in their responses to this item with girls considerably more often reporting they felt their high school grades did reflect their abilities. Large differences were also found between the responses of freshmen at different colleges. For example, among the boys, the per cent responding "yes" to this item ranged from 24 in one college to 72 in another college.

In general, there was a high relationship between the proportion of students in a particular college who answered this item affirmatively--that their grades did reflect their abilities--and the mean high school rank of that college. Colleges with able student bodies who had good high school records had larger proportions of students answering this item affirmatively. The college that had the smallest proportion answering the item negatively was the most selective Private Liberal Arts College in the state. The General College of the University, a junior college which takes only those students not eligible for other colleges at the University, had the highest proportion (72 per cent) answering this item negatively. Even within particular types of institutions, such as the Private Liberal Arts Colleges or the Catholic Men's Colleges, there was a considerable range of responses among entering-freshman classes.

Table 17-1

Comparison of Proportions of Students' Answers to Questionnaire Item Asking If High School Grades Reflect their Ability among Different Types of Colleges*

	University of Minnesota				Private Liberal Arts Colleges	Catholic Women's Colleges	Catholic Men's Colleges	Junior Colleges	State Colleges
	Ag	GC	IT	SLA					
MALE									
% of Yes	51	27	61	45	54		53	39	36
% of No	46	72	37	52	45		46	59	62
Range of % No					26 - 64		37 - 53	50 - 68	58 - 66
Number	231	552	619	1197	829		655	858	1474
FEMALE									
% of Yes	68	33	80	69	77	77		62	65
% of No	31	65	20	29	22	21		36	33
Range of % No					10 - 30	18 - 23		26 - 55	26 - 37
Number	152	243	10	1233	908	540		596	1349

*Per cents do not add to 100% because 1 to 4 per cent did not answer this item.

Relationship to Academic Achievement

Responses to this item were significantly related to freshman year grade point average in all institutions. Table 17-2 shows correlation coefficients between this item and grade point average for the types of institutions. The range and median coefficients are shown between high school rank and freshman grade point average and MSAT score and grade point average for comparison purposes. Table 17-3 shows similar correlation coefficients for girls.

In all of the types of colleges and for students of both sexes, (with one or two exceptions) this item shows a relationship to academic achievement to the extent indicated by correlation coefficients ranging from approximately -.2 to -.5. In the responses to this item "yes" was scored 1 and "no" scored 2. Therefore a negative correlation coefficient indicates that students who felt their grades in high school were an accurate reflection of their ability got substantially higher grades in college than those students who thought their high school grades were not an adequate indication of their true ability. This analysis is another instance in which biserial correlations would have been more appropriate than the product moment coefficients shown here, which were used because of the lack of a biserial computer program.

These coefficients can be compared with those for high school rank and MSAT for males in Table 17-2. Responses to this item were not as highly related to college grades as was high school percentile rank where correlation coefficients generally run .4 to .7. Responses to this item were related to college grades to the same extent as was MSAT score in most colleges. For men in most colleges, then, this one item could predict freshman grades as well as a score on a scholastic aptitude test.

A similar comparison of correlation coefficients for the girls in Table 17-3 shows that responses to this item, although significantly related to grades, are not as highly related as is high school percentile rank or scholastic aptitude test score. This is due to the higher relationship between scholastic aptitude test scores and college grades for girls than for boys (see Chapter 9).

Relationship to Other Variables

Because responses to this item showed such a substantial relationship to college grades, the question naturally arises as to the extent of the relationship between this item and the other two best predictor variables--high school rank and scholastic aptitude test. Correlation coefficients between responses to this item and these two variables are shown in Table 17-4. Correlation coefficients between this item and college grade point average as shown in the previous two tables are also shown in this table for comparison. Responses for both sexes show a relationship to high school rank to the extent indicated by a correlation coefficient of approximately -.40. Responses to this item are therefore related to high school rank to approximately the same extent as they are related to college grade point average. Responses to this item showed either a chance relationship or a very low order relationship to scholastic

Table 17-2

A Comparison of Correlation Coefficients Between Several Variables and Student Achievement in Different Types of Colleges

	Male							
	University of Minnesota				Private Liberal Arts	Catholic Men's Colleges	Junior Colleges	State Colleges
	Ag	GC	IT	SLA				
Item 47: Grades Accurately Reflect My Ability								
Total Group r	-.41	-.06	-.33	-.33	-.44	-.34	-.37	-.31
Range r's					-.17 to -.51	-.15 to -.55	-.28 to -.53	-.26 to -.51
Median r					-.33	-.33	-.40	-.29
HSR								
Total Group r	.67	.35	.55	.41	.58	.58	.64	.60
Range r's					.21 to .68	.52 to .66	.45 to .79	.51 to .71
Median r					.50	.54	.66	.58
MSAT								
Total Group r	.38	.17	.39	.34	.43	.40	.41	.43
Range r's					.23 to .63	.35 to .40	.19 to .59	.30 to .49
Median r					.46	.38	.45	.41

Table 17-3

	Female							
	University of Minnesota				Private Liberal Arts	Catholic Women's Colleges	Junior Colleges	State Colleges
	Ag	GC	IT	SLA				
Item 47: Grades Accurately Reflect My Ability								
Total Group r	-.37	-.28	--	-.29	-.32	-.32	-.35	-.35
Range r's					-.14 to -.42	-.22 to -.53	-.23 to -.55	-.16 to -.42
Median r					-.28	-.32	-.40	-.37
HSR								
Total Group r	.68	.40	--	.49	.58	.61	.61	.69
Range r's					-.10 to .72	.53 to .75	.48 to .81	.66 to .76
Median r					.54	.58	.69	.72
MSAT								
Total Group r	.65	.26	--	.44	.49	.53	.50	.61
Range r's					.29 to .58	.45 to .65	.34 to .70	.54 to .75
Median r					.45	.62	.49	.62

Table 17-4

Comparison of Correlation Coefficients Between Item 47 and Grade Point Average, High School Rank, and Minnesota Scholastic Aptitude Test Score

MALE	University of Minnesota				Private Liberal Arts	Catholic Colleges (Men's)	Range Junior Colleges	Other Junior Colleges	State Colleges
	Ag	GC	IT	SLA					
GPA	-.41	-.06	-.33	-.33	-.44	-.34	-.36	-.33	-.31
HSR	-.39	-.25	-.40	-.47	-.45	-.43	-.37	-.37	-.39
MSAT	-.07	.17	.01	-.01	-.17	-.08	-.11	-.06	-.12
Number	229	548	619	1196	543	655	401	410	1473
FEMALE						(Women's)			
GPA	-.37	-.28		-.29	-.32	-.32	-.36	-.28	-.35
HSR	-.50	-.28		-.41	-.45	-.43	-.38	-.41	-.44
MSAT	-.14	.05		-.11	-.16	-.12	-.14	-.21	-.19
Number	152	243		1232	591	540	285	255	1348

aptitude test score. The students' responses, then, as to whether or not they felt their high school grades adequately reflected their ability were somewhat related to their high school grades but unrelated to their level of ability.

Contribution to Regression Equations

In the regression equations discussed in Chapter 11, responses to this item were found to contribute significantly in most of them. In regression equations for each of the different types of colleges between all personality items and grade point average shown in Tables 11-6 and 11-7, this item contributed more to the multiple correlation coefficient than any other personality item. It can also be seen in these two tables that this item continued to make a significant contribution in most types of colleges even when high school rank and MSAT were added to the regression equation.

Because of the contribution of this item in such regression equations, responses to this item alone were included in a regression equation to determine if there were any types of colleges in which this item would add significantly to the coefficient obtained through high school rank and MSAT score alone. The results of this comparison are shown in Table 17-5. In all of the different types of institutions, this item adds very little to the multiple correlation coefficient obtained from the two variables, high school rank and MSAT. Although this item is highly related to college grades, it does not add to the prediction of college grades obtained by the two traditional predictor variables, high school rank and scholastic aptitude test score.

Relationship to Grades at Different Ability and Achievement Levels

The high relationship to college grades shown by responses to this item lead to questions as to where among the varying ability levels the relationship existed. Was the relationship strongest among able or not so able students? Was it highest among over-achievers or under-achievers? To what extent was the accuracy of students' perceptions of their ability and achievement levels related to college grades? The answers to these questions were studied by taking students at different levels of ability and achievement and comparing responses on this item to their college grade point averages.

Because a large number of sub-samples were involved in this analysis, only large populations of students could be studied. Groups selected were (1) males and (2) females who entered the University's College of Liberal Arts and (3) males and (4) females entering the five state colleges. From the students entering these two types of institutions those achieving an MSAT score which would place them in the top 20 per cent and in the bottom 20 per cent of each type of institution were pulled for study. The students appearing in each of these ability groups were further divided into three groups according to high school achievement--those achieving among the top third, the middle third, and the bottom third of entering freshmen at that type of institution. This yielded for students of both sexes, six groups, those with (1) high ability and high achievement, (2) high ability and medium achievement, (3) high ability and low achievement, (4) low ability and high achievement, (5) low ability and

Table 17-5

Comparison of Multiple Correlation Coefficients for Three Predictor Variables

MALE	University of Minnesota				Private Liberal Arts	Catholic Colleges (Men's)	Range Junior Colleges	Other Junior Colleges	State Colleges
	Ag	GC	IT	SLA					
HSR	.62	.33	.54	.41	.57	.59	.67	.57	.60
HSR and MSAT	.64	.40	.57	.48	.60	.61	.67	.58	.62
HSR, MSAT, and Grades Reflect Ability	.66	.40	.59	.54	.62	.62	.68	.60	.62
Number	223	538	612	1158	788	648	434	365	1425
FEMALE						(Women's)			
HSR	.65	.38	--	.49	.58	.62	.63	.59	.67
HSR and MSAT	.74	.45	--	.56	.62	.68	.66	.59	.71
HSR, MSAT, and Grades Reflect Ability	.75	.47	--	.57	.62	.69	.67	.59	.72
Number	148	230	--	1191	872	521	299	225	1321

medium achievement, and (6) low ability and low achievement. Each of these six groups were then further divided into two groups, those who responded affirmatively and those who responded negatively to this item. The mean freshman grade point average was then found for each of these groups.

The number of students in each of these groups and the mean college grade point average they achieved is shown for students entering the University's College of Liberal Arts in Table 17-6. Looking at the numbers of students in this table it is seen that a large number of students with high MSAT scores and high high school ranks felt their grades did accurately reflect their abilities but even with high achievement records, a substantial number of students felt their grades did not accurately reflect their abilities. Since it is doubtful that many of these students felt they over-achieved--that they obtained better grades than they should have at their ability level--it must be assumed that even though they obtained fairly good grades, they still felt they had the ability to do better.

Only one boy and two girls who were in the top one fifth on MSAT score but in the lower third on high school rank felt their grades accurately reflected their ability. Apparently, virtually all students who do well on scholastic aptitude tests in high school but who have a low record of achievement receive adequate notification that they are not achieving nearly as well in high school as they are capable of doing.

In comparing the freshman grade point averages achieved by students responding affirmatively to this item with those of students responding negatively, it is seen that for students of both sexes and in all of the groups but one, students answering affirmatively received higher grades than those answering negatively. In some cases the differences were quite large. For example, among males with high MSAT scores and high high school ranks those responding affirmatively obtained a 2.95 average in the University's College of Liberal Arts as compared with a 2.24 for those answering in the negative. It appears to make very little difference what reality actually is. If a student feels his high school grades are an accurate reflection of his ability, he gets better grades. This is true of students with high MSAT scores and high high school ranks, high MSAT scores and low high school ranks, low MSAT scores and high high school ranks, and low MSAT scores and low high school ranks. Among students with low MSAT scores and low high school ranks, those answering affirmatively do not do particularly well in college, obtaining a 1.64 for the boys and a 1.44 for the girls. Nevertheless even though this mean grade point average is well below the passing level it is still higher than that of students with similar MSAT scores and high school ranks who answered the item in the negative. In this group the boys obtained a 1.54 while the girls dropped to 1.19. The numbers in many of the cases are small so that the means are statistically significant in only four cases; however, the trend is there in every pair of groups but one.

Similar results were obtained when this portion of the study was repeated on the students in the five State Colleges as shown in Table 17-7. To obtain a similar range within the State Colleges considerably different cut-off points on test scores and high school rank had to be used. For example, to obtain the top 20 per cent in the State Colleges, a raw score on the MSAT of 42 was used as compared with 54 for the College of Liberal Arts. Similarly, a high school rank of 68 and above yielded the top third of the entering freshmen in

Table 17-6

The College Grades of U of M CLA Students with Different Ability and High School Achievement Levels[1] Compared According to Responses to Questionnaire Item Dealing with Perception of High School Grades

	Male			Female		
	N	Mean	SD	N	Mean	SD
High MSAT, High HSR						
Yes	92	2.95**	.62	177	2.87**	.61
No	35	2.24	.86	36	2.49	.75
High MSAT, Medium HSR						
Yes	11	2.41	.71	29	2.33*	.40
No	42	2.03	.86	23	1.92	.85
High MSAT, Low HSR						
Yes	1	3.02	--	2	1.65	.67
No	21	1.39	.80	5	1.64	1.07
Low MSAT, High HSR						
Yes	30	1.82	.61	44	1.89	.68
No	8	1.95	1.11	3	1.15	.86
Low MSAT, Medium HSR						
Yes	52	1.70**	.65	67	1.77	.56
No	52	1.40	.60	35	1.58	.58
Low MSAT, Low HSR						
Yes	12	1.64	.68	8	1.44	.34
No	28	1.54	.69	16	1.19	.62

[1] High MSAT = > 54 = top 20% entering freshmen
Low MSAT = < 33 = bottom 20% entering freshmen
High HSR = > 83 = top 1/3 entering freshmen
Medium HSR = 59 - 83 = middle 1/3 entering freshmen
Low HSR = < 59 = bottom 1/3 entering freshmen

*Difference significant at .05 level
**Difference significant at .01 level

Table 17-7

The College Grades of State College Students with Different Ability and High School Achievement Levels[1] Compared According to Responses to Questionnaire Item Dealing with Perception of High School Grades

	Male			Female		
	N	Mean	SD	N	Mean	SD
High MSAT, High HSR						
Yes	280	2.86**	.55	88	2.80**	.60
No	63	2.52	.64	67	2.37	.61
High MSAT, Medium HSR						
Yes	10	2.17	.44	9	1.99	.68
No	51	2.12	.49	21	2.14	.53
High MSAT, Low HSR						
Yes	3	2.36*	.12	3	2.06	.43
No	20	1.67	.55	10	2.08	.43
Low MSAT, High HSR						
Yes	--	--	--	35	2.05	.41
No	10	1.98	.56	17	2.08	.59
Low MSAT, Medium HSR						
Yes	33	1.85	.59	44	1.63	.51
No	45	1.74	.46	25	1.70	.46
Low MSAT, Low HSR						
Yes	63	1.48*	.60	53	1.44	.45
No	212	1.30	.63	74	1.36	.66

[1] High MSAT = > 42 = top 20% entering freshmen
Low MSAT = < 24 = bottom 20% of entering freshmen
High HSR = > 68 = top 1/3 entering freshmen
Medium HSR = 50 - 68 = middle 1/3 entering freshmen
Low HSR = < 50 = bottom 1/3 entering freshmen

*Difference significant at .05 level
**Difference significant at .01 level

the State Colleges as compared with 83 for the College of Liberal Arts.

Again, students answering this item in the affirmative achieved higher grade point averages than those answering it negatively. As with students in the University's College of Liberal Arts, the trend is the same in most of the groups at all levels of ability and high school achievement. Among the State College students the exceptions were found among several of the groups of girls. As was the case with the College of Liberal Arts students, the differences are particularly large among the high-ability, high-achieving groups. Again it may be said that no matter what a student's level of ability and achievement may actually be, no matter whether his perception of the relationship between his achievement and ability is accurate or inaccurate, students who feel that their grades in high school accurately measure their ability achieve better grades in college than those who do not feel that their high school grades reflect their potential.

Appendix I

The Variables Studied

The following is a list of the 31 variables analyzed in this study.

1 GPA

2 HSR

3 MSAT

4 "Education of father: (Check highest level attained)
(1) _____ Did not attend school
(2) _____ Some grade school
(3) _____ Completed eighth grade
(4) _____ Some high school
(5) _____ Graduated from high school
(6) _____ Business or trade school
(7) _____ Some college work (including teacher training)
(8) _____ Graduated from college
(9) _____ Holds more than one college degree"

5 "Education of mother: (Check highest level attained)
(1) _____ Did not attend school
(2) _____ Some grade school
(3) _____ Completed eighth grade
(4) _____ Some high school
(5) _____ Graduated from high school
(6) _____ Business or trade school
(7) _____ Some college work (including teacher training)
(8) _____ Graduated from college
(9) _____ Holds more than one college degree"

6 "Check the phrase which best describes your family's income:
(1) _____ Frequently have difficulty making ends meet
(2) _____ Sometimes have difficulty in getting the necessities
(3) _____ Have all the necessities but not many luxuries
(4) _____ Comfortable but not well-to-do
(5) _____ Well-to-do
(6) _____ Wealthy"

7 "If you are going to college next year (1961-1962), to what extent will your family help you pay expenses?
(1) _____ Pay all my expenses
(2) _____ Pay most of my expenses
(3) _____ Pay some of my expenses
(4) _____ Pay none of my expenses"

8 "Approximately how many books does your family have in your home? (Check approximate category)
(1) _____ 0 - 9
(2) _____ 10 - 24
(3) _____ 25 - 49
(4) _____ 50 - 99
(5) _____ 100 - up"

9 "Do you live on a farm? (1) _____ Yes (0) _____ No"

10 "How does your family feel about your going to college?
(1) _____ Insists that I go
(2) _____ Wants me to go
(3) _____ Is indifferent
(4) _____ Doesn't want me to go
(5) _____ Won't allow me to go"

11 "T F I meet strangers easily."

12 "T F In school I sometimes have been sent to the principal for cutting up."

13 "T F I feel self-conscious when reciting in class."

14 "T F I feel at ease with people."

15 "T F At times I have very much wanted to leave home."

16 "T F I have difficulty in starting a conversation with a person who has just been introduced."

17 "T F I find it hard to keep my mind on a task or job."

18 "T F I enjoy speaking before groups of people."

19 "T F I know who is responsible for most of my troubles."

20 "T F I am rather shy in contacts with people."

21 "T F I enjoy entertaining people."

22 "T F I like to meet new people."

23 "T F My parents and family find more fault with me than they should."

24 "T F I find it easy to express my ideas."

25 "T F I wish I were not so shy."

26 "T F I avoid people when it is possible."

27 "T F I have had very peculiar and strange experiences."

28 "T F I stay in the background at parties or social gatherings."

29 "T F Most of my close friends are planning to go to college."

30 "Would you say that your high school grades are a fairly accurate reflection of your ability?
1. _____ Yes 2. _____ No"

31 "If you had your choice, which type of job would you pick? (Check one)
(1) _____ A job which pays quite a low income but which you are sure of keeping.
(2) _____ A job which pays a good income but which you have a 50-50 chance of losing.
(3) _____ A job which pays an extremely good income if you make the grade but in which you lose almost everything if you don't make it."

Eight personality items were not included in many of the analyses because such items were answered by almost all students in one direction. Therefore, they were excluded from certain analyses because there was so little variability. These items are as follows:

"T F I get along as well as the average person in social activities."

"T F I am sure I get a raw deal from life."

"T F My parents have often objected to the kind of people I go around with."

"T F No one seems to understand me."

"T F My family does not like the work I have chosen or the work I intend to choose for my life work."

"T F I dislike social affairs."

"T F If people had not had it in for me I would have been much more successful."

"Do you think that most of the important things that happen to people are: (Check one)
(1) _____ More the result of circumstances beyond their control.
(2) _____ More the result of their own efforts."

Throughout the study, the numbers included in the various analyses vary slightly. A regression analysis requires complete data for all subjects for all variables included in the regression equation. Therefore, in a regression analysis, all students answering "other" to certain questionnaire items which were impossible to classify, and all those not answering a particular item were excluded. Many of the means and correlation coefficients shown in various tables were obtained at the same time of the regression analyses. Others were computed separately. Therefore the numbers vary somewhat from table to table but the differences are accounted for by these differences alone. No other method of sampling or selection was used.

Appendix II - Tables

Table A-1

College Means in Terms of Total Population Z-Scores

	University of Minnesota						Private Liberal Arts Colleges								Catholic Colleges			
	Ag	Ed	GC	IT	SLA	Mor	A	B	C	D	E	F	G	H	A	B	C	D
MSAT																		
Male	-.21	-.52	-1.03	+.51	+.33	-.16	+.58	+.26	+.07	+.05	+.28	+1.77	+.71	+.54	+.07	+.30	+.36	--
Female	+.03	-.10	-1.02	+1.60	+.44	-.03	+.73	+.18	+.24	+.26	+.37	+2.08	+1.15	+.40	+.31	+.54	+.31	+.36
Total	-.12	-.26	-1.03	+.58	+.39	-.09	+.66	+.22	+.15	+.16	+.33	+1.90	+.94	+.47	--	--	--	--
HSR																		
Male	-.14	-.01	-1.37	+.58	+.18	-.13	+.38	+.11	-.03	+.10	+.29	+.94	+.55	+.43	-.25	+.12	+.35	--
Female	+.37	+.34	-1.31	+1.21	+.50	+.47	+.84	+.58	+.53	+.61	+.51	+1.23	+.95	+.64	+.36	+.33	+.48	+.32
Total	+.06	+.21	-1.35	+.59	+.33	+.10	+.62	+.34	+.27	+.37	+.43	+1.06	+.77	+.54	--	--	--	--
GPA																		
Male	-.24	-.18	-.34	-.13	-.18	-.37	+.22	-.45	+.01	+.18	+.20	+.58	+.25	+.12	-.26	+.28	+.37	--
Female	+.20	-.13	-.41	+.88	+.07	+.25	+.50	+.22	+.29	+.60	+.30	+.91	+.79	+.32	+.92	+.67	+.58	+.54
Total	-.05	-.16	-.37	-.12	-.05	-.13	+.37	-.09	+.14	+.41	+.26	+.71	+.54	+.22	--	--	--	--
Male N	231	32	549	617	1193	115	149	38	129	115	108	42	113	133	357	79	220	--
Female N	152	52	242	10	1229	71	153	37	124	127	146	29	132	152	66	252	114	109
Total N	383	84	791	627	2422	186	302	75	253	242	254	71	245	285	--	--	--	--

(Table A-1 continued)

	Junior Colleges											State Colleges				
	A	B	C	D	E	F	G	H	I	J	K	A	B	C	D	E
MSAT																
Male	-.24	-.48	-.29	-.35	-.32	-.52	-.24	-.28	+.19	-.58	-.53	-.61	-.54	-.67	-.58	-.48
Female	+.11	-.51	-.19	-.27	-.09	-.24	-.12	-.08	+.14	-.49	-.28	-.28	-.23	-.32	-.32	-.17
Total	-.08	-.49	-.26	-.32	-.22	-.39	-.20	-.20	+.17	-.56	-.42	-.45	-.39	-.51	-.46	-.35
HSR																
Male	-.45	-.49	-.75	-.38	-.82	-.47	-.42	-.48	-.21	-.52	-.64	-.56	-.71	-.71	-.81	-.45
Female	+.01	-.10	+.07	.00	+.30	+.08	+.05	+.08	+.46	-.03	-.08	+.11	-.03	+.12	-.04	+.27
Total	-.24	-.31	-.51	-.24	-.35	-.22	-.26	-.24	+.14	-.41	-.39	-.24	-.38	-.32	-.44	-.14
GPA																
Male	+.03	-.22	-.08	-.42	-.43	.00	-.21	-.24	+.50	-.09	-.13	-.33	-.28	-.22	-.03	-.29
Female	+.43	+.59	+.35	+.09	+.24	+.59	+.68	+.11	+.62	+.42	+.46	.00	+.30	+.25	+.30	+.20
Total	+.21	+.14	+.05	-.24	-.14	+.28	+.08	-.09	+.55	+.03	+.13	-.17	.00	.00	+.13	-.08
Male N	109	64	57	100	43	126	67	133	46	72	40	434	575	158	114	191
Female N	91	52	24	56	31	109	33	95	51	22	31	417	538	141	104	144
Total N	200	116	81	156	74	235	100	228	97	94	71	851	1113	299	218	335

(Table A-1 continued)

	University of Minnesota						Private Liberal Arts Colleges								Catholic Colleges			
	Ag	Ed	GC	IT	SLA	Mor	A	B	C	D	E	F	G	H	A	B	C	D
Father's Occupation																		
Male	-.22	-.15	-.08	.00	+.18	-.17	+.44	+.06	-.15	+.18	+.32	+.82	+.49	+.25	+.17	+.26	+.16	--
Female	+.02	-.13	+.12	+.28	+.14	-.18	+.47	-.08	.00	-.06	+.39	+.52	+.44	+.32	-.20	+.20	-.01	+.39
Total	-.13	-.13	-.02	.00	+.16	-.18	+.45	.00	-.08	+.06	+.36	+.70	+.46	+.29	--	--	--	--
Father's Education																		
Male	-.24	-.09	-.08	-.03	-.24	-.50	+.36	+.05	-.15	-.19	+.37	+1.05	+.49	+.33	+.22	+.12	+.15	--
Female	+.06	+.03	+.26	+.52	+.21	-.42	+.47	+.04	-.15	-.22	+.20	+.79	+.55	+.42	-.38	+.20	-.26	+.27
Total	-.12	-.02	+.02	+.04	+.23	-.47	+.42	+.04	-.15	-.21	+.28	+.94	+.53	+.38	--	--	--	--
Mother's Education																		
Male	-.01	-.08	-.15	-.01	+.09	-.15	+.50	+.22	-.12	+.10	+.49	+.85	+.43	+.38	--	+.12	+.06	--
Female	+.09	+.04	-.04	+.67	+.10	-.12	+.48	-.08	.00	+.13	+.35	+1.11	+.45	+.36	-.23	+.14	-.12	+.20
Total	+.03	-.01	-.11	-.01	+.09	-.14	+.49	+.08	-.06	+.11	+.41	+.96	+.44	+.36	--	--	--	--
Male N	231	32	549	617	1193	115	149	38	129	115	108	42	113	133	357	79	220	--
Female N	152	52	242	10	1229	71	153	37	124	127	146	29	132	152	66	252	114	109
Total N	383	84	791	627	2422	186	302	75	253	242	254	71	245	285	--	--	--	--

(Table A-1 continued)

	Junior Colleges											State Colleges				
	A	B	C	D	E	F	G	H	I	J	K	A	B	C	D	E
Father's Occupation																
Male	-.71	-.37	-.69	-.79	-.77	-.60	-.36	-.07	.00	-.25	-.47	-.09	-.08	-.09	-.08	-.04
Female	-.45	-.31	-.98	-.61	-.65	-.53	-.61	-.15	.00	-.02	+.14	-.15	-.12	-.21	-.12	-.10
Total	-.60	-.34	-.77	-.72	-.72	-.57	-.44	-.11	.00	-.20	-.21	-.12	-.10	-.15	-.10	-.07
Father's Education																
Male	-.30	-.43	-.35	-.44	-.30	-.15	-.16	-.15	-.11	-.52	-.52	-.23	-.30	-.52	-.34	-.42
Female	-.17	-.54	-.52	-.44	-.44	-.39	-.32	-.26	-.34	-.32	-.26	-.28	-.33	-.58	-.19	-.41
Total	-.24	-.47	-.40	-.44	-.36	-.26	-.20	-.19	-.23	-.47	-.41	-.25	-.32	-.55	-.27	-.42
Mother's Education																
Male	-.23	-.38	-.14	-.36	-.14	-.10	-.13	.00	-.18	-.28	-.21	-.18	-.14	-.32	-.21	-.29
Female	-.08	-.29	-.40	-.21	-.32	-.19	+.09	-.07	-.48	-.34	-.03	-.13	-.13	-.21	-.20	-.17
Total	-.16	-.34	-.20	-.31	-.21	-.14	-.05	-.03	-.33	-.30	-.13	-.16	-.13	-.26	-.21	-.24
Male N	109	64	57	100	43	126	67	133	46	72	40	434	575	158	114	191
Female N	91	52	24	56	31	109	33	95	51	22	31	417	538	141	104	144
Total N	200	116	81	156	74	235	100	228	97	94	71	851	1113	299	218	335

Table A-2

Percentage of High MSAT Male Minnesota Freshmen Receiving Various Grades at Each College

	University of Minnesota						Private Liberal Arts Colleges								Catholic Men's Colleges		
	Ag	Ed	GC	IT	SLA	Mor	A	B	C	D	E	F	G	H	A	B	C
N Grades 3.0 and Above	12	1	1	63	59	2	18	3	12	13	11	8	15	20	31	21	14
% Grades 3.0 and Above	21.8	33.3	12.5	18.6	21.1	7.1	20.7	17.6	27.9	31.0	23.9	19.0	21.1	27.0	29.0	18.1	40.0
N Grades 2.0-2.99	21	--	2	142	123	17	46	9	16	14	27	32	38	29	54	52	16
% Grades 2.0-2.99	38.2	--	25.0	42.0	44.0	60.7	52.9	52.9	37.2	33.3	58.7	76.2	53.5	39.2	50.5	44.8	45.7
N Grades Less than 2.0	22	2	5	133	98	9	23	5	15	15	8	2	18	25	22	43	5
% Grades Less than 2.0	40.0	66.7	62.5	39.3	35.0	32.1	26.4	29.4	34.9	35.7	17.4	4.8	25.4	33.8	20.6	37.1	14.3
Total N	231	32	549	617	666	115	149	38	129	115	108	42	113	133	220	357	79
N with MSAT 45 or over	55	3	8	338	280	28	87	17	43	42	46	42	71	74	107	116	35
% with MSAT 45 or over	23.8	9.4	1.5	54.8	42.0	24.3	58.4	44.7	30.0	36.5	42.6	100.	62.8	55.6	48.6	32.5	44.3

(Table A-2 continued)

	Junior Colleges											State Colleges				
	A	B	C	D	E	F	G	H	I	J	K	A	B	C	D	E
N Grades 3.0 and Above	10	2	3	5	3	8	1	--	6	4	1	12	16	2	4	7
% Grades 3.0 and Above	43.4	20.0	23.1	29.4	30.0	42.1	6.7	--	40.0	44.4	16.7	20.7	18.8	22.2	28.6	23.3
N Grades 2.0-2.99	8	7	8	6	3	7	9	17	8	3	3	33	47	5	8	12
% Grades 2.0-2.99	34.8	70.0	61.5	35.3	30.0	36.8	60.0	65.8	53.3	33.3	42.9	56.9	55.3	55.6	57.1	40.0
N Grades Less than 2.0	5	1	2	6	4	4	5	9	1	2	3	13	22	2	2	11
% Grades Less than 2.0	21.7	10.0	15.4	35.3	40.0	21.1	33.3	34.6	6.7	22.2	42.9	22.4	25.9	22.2	14.3	36.7
Total N	109	64	57	100	43	126	67	133	46	72	40	434	575	158	114	191
N with MSAT 45 or over	23	10	13	17	10	19	15	26	15	9	7	58	85	9	14	30
% with MSAT 45 or over	21.1	15.6	22.8	17.0	23.3	15.1	22.4	19.4	32.6	12.5	17.5	13.4	14.8	5.7	12.3	15.7

Table A-3

Percentage of High MSAT Female Minnesota Freshmen Receiving Various Grades at Each College

	University of Minnesota						Private Liberal Arts Colleges								Catholic Women's Colleges			
	Ag	Ed	GC	IT	SLA	Mor	A	B	C	D	E	F	G	H	A	B	C	D
N Grades 3.0 and Above	18	3	--	4	132	7	22	6	12	22	16	10	36	25	22	49	14	24
% Grades 3.0 and Above	32.7	15.0	--	44.4	25.2	35.0	22.0	35.3	22.2	40.7	24.6	34.5	34.0	35.7	66.7	34.8	28.0	46.2
N Grades 2.0-2.99	30	10	3	4	286	11	66	9	34	28	39	18	59	37	11	81	36	23
% Grades 2.0-2.99	54.5	50.0	75.0	44.4	54.6	55.0	66.0	52.9	63.0	51.9	60.0	62.1	55.7	52.8	33.3	57.4	72.0	44.2
N Grades Less than 2.0	7	7	1	1	106	2	12	2	8	4	10	1	11	8	--	11	--	5
% Grades Less than 2.0	12.7	35.0	25.0	11.1	20.2	10.0	12.0	11.8	14.8	7.4	15.4	3.4	10.4	11.4	--	7.8	--	9.6
Total N	152	52	242	10	1120	71	153	37	124	127	146	29	132	152	66	252	114	109
N with MSAT 45 or over	55	20	4	9	524	20	100	17	54	54	65	29	106	70	33	141	50	52
% with MSAT 45 or over	36.2	38.5	1.7	90.0	46.8	28.2	65.4	45.9	43.5	42.5	44.5	100.	80.3	46.1	50.0	56.0	43.9	47.7

(Table A-3 continued)

	Junior Colleges											State Colleges				
	A	B	C	D	E	F	G	H	I	J	K	A	B	C	D	E
N Grades 3.0 and Above	16	8	2	5	2	14	7	12	8	1	3	35	55	15	16	9
% Grades 3.0 and Above	45.7	72.7	28.6	33.3	22.2	48.3	77.8	37.5	36.4	33.3	37.5	33.0	39.9	53.6	61.5	20.9
N Grades 2.0-2.99	15	3	5	8	5	14	2	10	14	2	4	60	68	10	9	28
% Grades 2.0-2.99	42.9	27.3	71.4	53.3	55.6	48.3	22.2	31.3	63.6	66.7	50.0	56.6	49.3	35.7	34.6	65.1
N Grades Less than 2.0	4	--	--	2	2	1	--	10	--	--	1	11	15	3	1	6
% Grades Less than 2.0	11.4	--	--	13.3	22.2	3.4	--	31.3	--	--	12.5	10.4	10.9	10.7	3.8	14.0
Total N	91	52	24	56	31	109	33	95	51	22	31	417	538	141	104	144
N with MSAT 45 or over	35	11	7	15	9	29	9	32	22	3	8	106	138	28	26	43
% with MSAT 45 or over	38.5	21.2	29.2	26.8	29.0	26.6	27.3	33.7	43.1	13.6	25.8	25.4	25.7	19.9	25.0	29.9

Table A-4

Percentage of High HSR Male Minnesota Freshmen Receiving Various Grades at Each College

	University of Minnesota						Private Liberal Arts Colleges								Catholic Men's Colleges		
	Ag	Ed	GC	IT	SLA	Mor	A	B	C	D	E	F	G	H	A	B	C
N Grades 3.0 and Above	16	2	1	67	57	4	16	3	9	17	14	8	13	22	34	21	16
% Grades 3.0 and Above	34.8	28.6	50.0	20.6	26.1	21.1	23.9	33.3	30.0	53.1	35.0	23.5	25.0	36.1	43.6	26.6	66.7
N Grades 2.0-2.99	24	2	1	157	107	10	40	5	17	12	22	24	32	28	37	44	6
% Grades 2.0-2.99	52.2	28.6	50.0	48.1	49.1	52.6	60.0	55.6	56.7	37.5	55.0	70.6	61.5	45.9	47.4	55.7	25.0
N Grades Less than 2.0	6	3	--	102	54	5	11	1	4	3	4	2	7	11	7	14	2
% Grades Less than 2.0	13.0	42.9	--	31.2	24.8	26.3	16.4	11.1	13.3	9.4	10.0	5.9	13.5	18.0	9.0	17.7	8.3
Total N	231	32	549	617	666	115	149	38	129	114	108	42	113	133	220	358	79
N with HSR 85 or over	46	7	2	326	218	19	67	9	30	32	40	34	52	61	78	79	24
% with HSR 85 or over	19.9	21.9	.4	52.8	32.7	16.5	45.0	23.7	23.3	28.1	37.0	81.0	46.0	45.9	35.5	22.1	30.4

(Table A-4 continued)

	Junior Colleges											State Colleges				
	A	B	C	D	E	F	G	H	I	J	K	A	B	C	D	E
N Grades 3.0 and Above	12	4	2	6	2	9	4	1	8	7	--	17	22	6	7	10
% Grades 3.0 and Above	54.5	40.0	28.6	50.0	100.	56.3	33.3	7.1	61.5	63.6	--	38.6	41.5	46.2	50.0	35.7
N Grades 2.0-2.99	8	5	5	5	--	7	7	10	5	4	5	25	26	5	7	14
% Grades 2.0-2.99	36.4	50.0	71.4	41.7	--	43.8	58.3	71.4	38.5	36.4	100.	56.8	49.1	38.5	50.0	50.0
N Grades Less than 2.0	2	1	--	1	--	--	1	3	--	--	--	2	5	2	--	4
% Grades Less than 2.0	9.0	10.0	--	8.3	--	--	8.3	21.4	--	--	--	4.5	9.4	15.4	--	14.3
Total N	109	64	57	100	43	126	67	133	46	72	40	435	575	158	114	191
N with HSR 85 or over	22	10	7	12	2	16	12	14	13	11	5	44	53	13	14	28
% with HSR 85 or over	20.2	15.6	12.3	12.0	4.7	12.7	17.9	10.5	28.3	15.3	12.5	10.1	9.2	8.2	12.3	14.7

Table A-5

Percentage of High HSR Female Minnesota Freshmen Receiving Various Grades at Each College

	University of Minnesota						Private Liberal Arts Colleges								Catholic Women's Colleges			
	Ag	Ed	GC	IT	SLA	Mor	A	B	C	D	E	F	G	H	A	B	C	D
N Grades 3.0 and Above	16	3	2	4	141	9	25	6	16	30	17	10	36	29	19	47	17	25
% Grades 3.0 and Above	28.1	16.7	50.0	40.0	27.2	29.0	24.0	42.9	29.6	43.5	27.0	34.5	34.3	34.1	79.2	45.6	34.7	54.3
N Grades 2.0-2.99	34	9	2	4	282	18	69	6	30	35	40	18	63	45	5	52	32	20
% Grades 2.0-2.99	59.6	50.0	50.0	40.0	54.4	58.1	66.3	42.9	55.6	50.7	63.5	62.1	60.0	52.9	20.8	50.5	65.3	43.5
N Grades Less than 2.0	7	6	---	2	95	4	10	2	8	4	6	1	6	11	---	4	---	1
% Grades Less than 2.0	12.3	33.3	---	20.0	18.3	12.9	9.6	14.2	14.8	5.8	9.5	3.4	5.7	12.9	---	3.9	---	2.2
Total N	152	53	237	10	1108	71	153	37	124	128	146	29	132	152	66	247	113	108
N with HSR 85 or over	57	18	4	10	518	31	104	14	54	69	63	29	105	85	24	103	49	46
% with HSR 85 or over	37.5	34.0	1.7	100.	46.8	43.7	68.0	37.8	43.5	53.9	43.2	100.	79.5	55.9	36.4	41.7	43.4	42.6

(Table A-5 continued)

	Junior Colleges											State Colleges				
	A	B	C	D	E	F	G	H	I	J	K	A	B	C	D	E
N Grades 3.0 and Above	12	10	3	4	4	19	8	15	9	3	3	44	70	19	15	11
% Grades 3.0 and Above	54.5	76.9	60.0	30.8	36.4	59.4	80.0	48.4	40.9	60.0	33.3	33.1	50.0	45.2	53.6	20.4
N Grades 2.0-2.99	10	3	2	8	6	12	2	12	13	2	6	78	64	20	13	38
% Grades 2.0-2.99	45.5	23.1	40.0	61.5	54.5	37.5	20.0	38.7	50.1	40.0	66.7	58.6	45.7	47.6	46.4	70.4
N Grades Less than 2.0	--	--	--	1	1	1	--	4	--	--	--	11	6	3	--	5
% Grades Less than 2.0	--	--	--	7.7	.9	3.1	--	12.9	--	--	--	8.3	4.3	7.1	--	9.3
Total N	91	52	24	56	31	109	33	95	51	22	31	415	537	141	104	144
N with HSR 85 or over	22	13	5	13	11	32	10	31	22	5	9	133	140	42	28	54
% with HSR 85 or over	24.2	25.0	20.8	23.2	35.5	29.4	30.3	32.6	43.1	22.7	29.0	32.0	26.1	29.8	26.9	37.5

Table A-6

Percentage of Male Minnesota Freshmen in Each College Reporting Various Types of Father's Occupation

	University of Minnesota							Private Liberal Arts Colleges								Catholic Men's Colleges		
Occupation	Ag %	Ed %	GC %	IT %	SLA %	Dul %	Mor %	A %	B %	C %	D %	E %	F %	G %	H %	A %	B %	C %
Profession	7	7	6	13	16	10	4	24	23	10	16	20	39	28	18	14	14	10
Owns or Manages Business	8	21	22	16	18	18	19	20	5	14	20	19	17	20	17	22	21	31
Office Work	5	10	9	8	11	8	1	5	5	5	1	9	12	5	12	7	12	11
Sales	5	3	10	8	11	9	4	11	15	8	9	14	7	8	14	10	9	8
Owns or Manages Farm	45	10	2	12	5	3	47	11	21	17	28	17	2	10	9	12	7	8
Skilled Tradesman	13	28	26	22	20	22	8	9	18	22	6	9	10	11	12	14	18	16
Factory Worker	7	14	12	10	8	14	9	6	8	12	8	6	--	5	9	10	9	8
Other	11	7	13	11	12	17	9	15	5	13	13	7	12	13	9	10	10	8
Total	101	100	100	100	101	101	101	101	100	101	101	101	99	100	100	99	100	100
Number	229	29	539	603	1174	408	113	149	39	128	117	108	41	112	130	216	352	79

(Table A-6 continued)

	Junior Colleges											State Colleges				
	A	B	C	D	E	F	G	H	I	J	K	A	B	C	D	E
Occupation	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Profession	5	3	4	1	5	7	8	4	23	3	5	7	7	3	7	10
Owns or Manages Business	7	16	12	3	5	9	16	20	7	14	8	21	21	23	21	21
Office Work	6	8	7	6	5	7	5	7	5	1	--	5	4	3	5	4
Sales	3	5	2	4	--	5	3	11	5	4	8	7	9	8	8	5
Owns or Manages Farm	1	10	--	19	2	--	2	16	34	55	38	15	23	26	18	19
Skilled Tradesman	36	19	30	16	33	32	21	13	16	6	23	20	17	17	19	14
Factory Worker	32	24	42	37	30	34	27	12	9	9	15	13	10	7	11	14
Other	11	15	4	15	21	6	19	18	2	8	5	13	11	12	11	13
Total	101	100	101	101	101	100	101	101	101	100	102	101	102	99	100	100
Number	106	62	57	96	43	124	67	130	44	71	40	428	565	155	114	189

Table A-7

Percentage of Female Minnesota Freshmen in Each College Reporting Various Types of Father's Occupation

	University of Minnesota							Private Liberal Arts Colleges								Catholic Women's Colleges			
Occupation	Ag %	Ed %	GC %	IT %	SLA %	Dul %	Mor %	A %	B %	C %	D %	E %	F %	G %	H %	A %	B %	C %	D %
Profession	11	6	11	9	14	9	4	26	14	13	9	23	41	20	22	10	13	6	19
Owns or Manages Business	18	29	20	27	20	15	17	21	14	19	14	19	--	21	19	16	24	19	25
Office Work	7	2	10	18	9	8	3	7	3	3	3	8	10	11	9	5	10	6	1
Sales	7	12	12	9	11	4	6	5	5	5	8	6	7	6	7	8	9	10	11
Owns or Manages Farm	24	4	2	--	4	5	46	16	16	20	31	20	3	13	7	13	5	23	16
Skilled Tradesman	16	39	20	27	23	25	10	11	24	21	10	9	14	11	20	24	17	14	11
Factory Worker	8	10	9	--	8	13	9	3	8	9	7	4	7	3	4	16	9	7	3
Other	9	--	16	9	11	21	4	11	16	11	18	11	17	16	13	8	14	15	14
Total	100	102	100	99	100	100	99	100	100	101	100	100	99	101	101	100	101	100	100
Number	149	52	239	11	1207	308	69	151	37	122	128	143	29	132	149	62	244	110	108

(Table A-7 continued)

	Junior Colleges											State Colleges				
	A	B	C	D	E	F	G	H	I	J	K	A	B	C	D	E
Occupation	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Profession	7	8	--	4	3	7	6	8	16	9	13	8	6	5	7	9
Owns or Manages Business	18	12	9	2	13	8	9	17	14	14	19	14	17	10	19	15
Office Work	4	4	--	8	3	6	6	4	4	--	--	5	4	4	2	4
Sales	--	2	--	9	3	3	--	2	--	9	7	8	6	7	9	4
Owns or Manages Farm	1	12	4	17	--	1	--	25	35	46	52	18	28	42	20	26
Skilled Tradesman	23	29	22	19	32	34	28	25	14	9	3	18	15	16	17	13
Factory Worker	32	12	48	26	32	21	31	7	8	--	--	11	8	3	12	10
Other	14	22	17	15	13	20	19	13	8	14	7	17	16	14	15	20
Total	99	101	100	100	99	100	99	101	99	101	101	99	100	101	101	101
Number	90	51	23	53	31	103	32	93	49	22	31	415	526	137	103	138

Table A-8

Percentage of Male Minnesota Freshmen in Each College Reporting Various Levels of Fathers' Education

	University of Minnesota							Private Liberal Arts Colleges								Catholic Men's Colleges		
Level of Education	Ag %	Ed %	GC %	IT %	SLA %	Dul %	Mor %	A %	B %	C %	D %	E %	F %	G %	H %	A %	B %	C %
Did Not Attend	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Some Grade School	2	13	3	1	2	2	1	1	3	2	4	--	--	1	2	4	2	3
Completed Eighth Grade	27	16	19	20	13	17	41	13	23	24	31	14	5	11	13	17	17	10
Some High School	15	13	12	12	11	14	12	11	5	13	12	6	--	5	8	11	10	9
Graduated from High School	26	10	29	26	25	29	31	22	23	24	21	25	14	24	22	21	29	34
Business or Trade School	10	19	14	9	10	7	5	10	10	13	5	9	2	8	12	7	9	8
Some College	7	10	10	11	14	12	4	12	18	14	8	15	14	17	17	15	13	13
Graduated from College	10	16	11	16	18	15	3	16	15	6	12	20	43	18	17	20	15	16
More than One College Degree	2	3	2	4	8	3	3	15	3	3	7	10	21	15	10	6	6	8
Total	99	100	100	99	101	99	100	100	100	99	100	99	99	99	101	101	101	101
N	231	31	538	611	1181	402	113	148	39	126	116	108	42	111	132	218	357	79

(Table A-8 continued)

Level of Education	Junior Colleges A %	B %	C %	D %	E %	F %	G %	H %	I %	J %	K %	State Colleges A %	B %	C %	D %	E %
Did Not Attend	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
Some Grade School	1	3	--	5	--	5	5	2	7	3	3	3	3	8	3	7
Completed Eighth Grade	28	35	25	28	31	18	21	22	29	44	40	28	32	36	30	33
Some High School	23	14	23	14	21	18	9	13	11	11	18	11	11	11	15	16
Graduated from High School	24	25	39	37	21	25	33	31	11	24	18	28	26	24	24	22
Business or Trade School	3	5	--	7	7	10	6	8	7	3	12	10	8	7	12	5
Some College	10	13	4	2	7	13	11	12	11	8	3	8	7	6	4	5
Graduated from College	9	3	11	5	10	10	15	12	16	6	8	10	9	7	7	10
More than One College Degree	2	2	--	2	2	2	--	1	9	1	--	3	3	1	3	2
Total	100	100	102	100	99	101	100	101	101	100	102	101	99	100	99	100
N	108	63	57	100	42	125	66	130	45	71	40	432	561	157	115	190

Table A-9

Percentage of Female Minnesota Freshmen in Each College Reporting Various Levels of Father's Education

	University of Minnesota							Private Liberal Arts Colleges								Catholic Women's Colleges			
Level of Education	Ag %	Ed %	GC %	IT %	SLA %	Dul %	Mor %	A %	B %	C %	D %	E %	F %	G %	H %	A %	B %	C %	D %
Did Not Attend	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--
Some Grade School	3	6	1	--	2	5	4	1	11	3	4	1	3	1	1	8	3	4	3
Completed Eighth Grade	21	13	12	--	13	15	32	11	11	27	29	17	3	7	13	27	13	34	16
Some High School	9	6	7	8	11	17	13	8	8	12	12	8	7	5	9	20	8	10	6
Graduated from High School	20	30	28	42	26	28	25	20	24	24	21	24	14	21	17	20	28	19	22
Business or Trade School	15	17	15	--	11	7	13	11	16	9	12	14	7	14	11	8	11	11	11
Some College	11	17	13	17	14	8	7	14	8	11	9	8	17	20	15	6	15	11	15
Graduated from College	17	8	20	25	17	13	2	18	16	7	8	16	24	23	22	6	16	10	16
More than One College Degree	5	4	4	8	7	6	3	16	5	7	5	11	24	9	12	5	7	3	11
Total	101	101	100	100	101	99	99	99	99	100	100	99	99	100	100	100	101	102	100
N	151	53	234	12	1210	303	68	153	37	123	130	143	29	132	151	64	243	112	110

(Table A-9 continued)

	Junior Colleges											State Colleges				
Level of Education	A %	B %	C %	D %	E %	F %	G %	H %	I %	J %	K %	A %	B %	C %	D %	E %
Did Not Attend	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Some Grade School	4	4	4	4	3	6	6	6	4	--	3	5	3	6	1	7
Completed Eighth Grade	24	39	31	28	30	21	34	26	42	32	39	27	32	40	28	35
Some High School	17	12	19	17	23	28	9	10	18	9	6	14	14	11	12	12
Graduated from High School	19	29	35	36	20	26	19	24	10	41	16	24	25	29	30	19
Business or Trade School	9	4	--	6	3	2	6	19	2	9	16	10	8	6	8	9
Some College	11	6	8	2	3	9	16	3	4	--	3	10	8	4	9	7
Graduated from College	16	6	4	6	10	7	6	7	8	--	10	7	9	4	7	8
More than One College Degree	--	--	--	2	7	2	3	4	12	9	6	4	2	1	6	3
Total	100	100	101	101	99	101	99	99	100	100	99	101	101	101	101	100
N	89	51	26	53	30	104	32	94	50	22	31	413	530	140	103	140

Table A-10

Percentage of Male Minnesota Freshmen in Each College Reporting Various Levels of Mother's Education

	University of Minnesota							Private Liberal Arts Colleges								Catholic Men's Colleges		
Level of Education	Ag %	Ed %	GC %	IT %	SLA %	Dul %	Mor %	A %	B %	C %	D %	E %	F %	G %	H %	A %	B %	C %
Did Not Attend	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Some Grade School	--	--	1	1	1	1	--	--	3	2	1	--	--	1	1	1	1	1
Completed Eighth Grade	15	13	11	12	8	7	16	7	5	14	12	6	2	2	8	14	10	9
Some High School	8	6	12	9	9	11	7	5	13	10	13	6	--	7	6	9	10	8
Graduated from High School	36	53	48	43	44	45	49	27	28	41	27	33	19	35	29	35	40	37
Business or Trade School	10	3	9	8	8	10	4	10	5	10	11	4	10	12	13	7	6	15
Some College	17	16	8	15	13	12	17	24	33	12	21	24	36	19	20	16	17	14
Graduated from College	13	9	10	12	14	12	7	23	13	11	15	27	31	24	23	17	12	16
More than One College Degree	--	--	1	1	2	1	--	3	--	--	1	2	2	1	2	1	3	--
Total	99	100	100	101	99	99	100	99	100	100	101	102	100	101	102	100	99	100
N	229	32	539	611	1179	404	113	147	39	126	116	109	42	113	133	218	354	79

(Table A-10 continued)

Level of Education	Junior Colleges A %	B %	C %	D %	E %	F %	G %	H %	I %	J %	K %	State Colleges A %	B %	C %	D %	E %
Did Not Attend	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Some Grade School	2	2	2	1	--	2	2	1	--	1	3	1	--	3	--	2
Completed Eighth Grade	12	18	11	23	17	14	17	8	24	27	23	19	17	23	22	25
Some High School	17	18	19	20	14	13	14	14	7	9	--	10	12	10	10	12
Graduated from High School	43	47	40	31	43	40	35	45	36	34	43	40	39	32	37	30
Business or Trade School	6	--	4	2	2	5	5	5	7	1	13	7	8	9	9	7
Some College	9	8	12	12	5	13	15	14	16	17	10	14	12	13	15	15
Graduated from College	10	6	11	10	19	13	14	12	11	10	10	8	10	8	6	8
More than One College Degree	--	2	2	--	--	--	--	2	--	--	--	1	1	1	2	1
Total	99	101	101	99	100	100	102	101	101	99	102	100	99	99	101	100
N	109	62	57	99	42	126	66	129	45	70	40	431	561	154	115	186

Table A-11

Percentage of Female Minnesota Freshmen in Each College Reporting Various Levels of Mother's Education

	University of Minnesota							Private Liberal Arts Colleges								Catholic Women's Colleges			
Level of Education	Ag %	Ed %	GC %	IT %	SLA %	Dul %	Mor %	A %	B %	C %	D %	E %	F %	G %	H %	A %	B %	C %	D %
Did Not Attend	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--
Some Grade School	1	2	2	--	1	--	1	--	3	--	--	--	--	--	--	--	2	4	--
Completed Eighth Grade	11	10	8	--	8	12	13	8	16	18	17	10	--	6	5	18	8	19	14
Some High School	8	6	12	--	9	15	10	4	11	6	8	3	3	2	7	12	9	8	9
Graduated from High School	32	37	41	50	39	31	39	28	24	31	27	32	14	33	34	38	34	30	26
Business or Trade School	16	16	16	--	14	12	11	11	18	13	6	14	10	14	17	14	13	10	14
Some College	20	22	7	10	16	15	23	21	24	19	29	22	14	20	18	9	19	19	16
Graduated from College	11	8	13	30	12	13	3	28	5	12	14	18	48	23	18	6	13	11	19
More than One College Degree	--	--	1	10	1	1	--	1	--	1	--	1	10	2	3	2	1	--	2
Total	99	101	100	100	100	99	100	101	101	101	101	100	99	100	102	99	99	101	100
N	152	51	240	10	1218	307	71	152	38	121	131	146	29	132	152	65	250	113	110

(Table A-11 continued)

Level of Education	Junior Colleges A %	B %	C %	D %	E %	F %	G %	H %	I %	J %	K %	State Colleges A %	B %	C %	D %	E %
Did Not Attend	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Some Grade School	3	6	--	--	--	3	--	1	2	--	3	2	1	1	1	1
Completed Eighth Grade	10	22	19	18	3	9	3	17	28	10	19	17	16	21	22	20
Some High School	15	10	19	11	26	16	19	10	18	19	19	10	14	14	8	13
Graduated from High School	37	29	42	46	52	45	44	34	30	48	16	36	33	28	37	28
Business or Trade School	4	6	4	4	13	6	6	11	4	5	6	8	10	6	7	8
Some College	17	14	12	13	6	13	9	13	10	10	10	16	18	21	16	20
Graduated from College	13	12	4	7	--	8	16	12	8	5	23	11	8	8	9	8
More than One College Degree	--	--	--	2	--	--	3	2	--	5	3	1	--	--	1	1
Total	99	99	100	101	100	100	100	100	100	102	99	101	100	99	101	99
N	91	49	26	56	31	107	32	93	50	21	31	414	538	141	103	143

Table A-12

Percentage of Male Minnesota Freshmen in Each College Reporting Adequacy of Family Income

	University of Minnesota							Private Liberal Arts Colleges								Catholic Men's Colleges		
	Ag	Ed	GC	IT	SLA	Dul	Mor	A	B	C	D	E	F	G	H	A	B	C
Family Income	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Frequent Difficulty	4	6	2	2	2	2	3	--	5	3	--	2	--	2	2	1	3	3
Some Difficulty	4	--	3	3	3	4	5	1	5	5	5	2	--	--	2	3	4	1
Necessities Only	23	47	18	24	19	19	27	16	28	22	30	17	15	13	21	26	18	17
Comfortable	61	38	60	64	65	67	58	70	59	64	54	64	71	75	63	59	60	62
Well-to-Do and Wealthy	9	9	16	7	11	8	7	14	3	6	10	16	15	11	13	12	16	18
Total	101	100	99	100	100	100	100	101	100	100	99	101	101	101	101	101	101	101
N	231	32	547	616	1186	402	114	146	39	128	116	107	41	112	133	218	356	79

(Table A-12 continued)

	Junior Colleges											State Colleges				
Family Income	A %	B %	C %	D %	E %	F %	G %	H %	I %	J %	K %	A %	B %	C %	D %	E %
Frequent Difficulty	2	--	--	5	--	4	3	2	7	7	3	3	3	4	4	4
Some Difficulty	2	3	5	2	2	4	6	3	7	7	3	3	4	8	3	3
Necessities Only	23	23	18	20	35	26	21	23	22	38	33	28	22	30	26	24
Comfortable	67	64	75	67	61	62	63	63	60	47	58	57	64	51	58	62
Well-to-Do and Wealthy	7	9	2	6	2	4	8	9	4	1	5	8	9	8	9	8
Total	101	99	100	100	100	100	101	100	100	100	102	99	102	101	100	101
N	108	64	57	100	43	126	67	132	45	72	40	432	570	158	115	191

Table A-13

Percentage of Female Minnesota Freshmen in Each College Reporting Adequacy of Family Income

	University of Minnesota							Private Liberal Arts Colleges								Catholic Women's Colleges			
Family Income	Ag %	Ed %	GC %	IT %	SLA %	Dul %	Mor %	A %	B %	C %	D %	E %	F %	G %	H %	A %	B %	C %	D %
Frequent Difficulty	3	2	2	20	3	4	4	1	--	2	3	3	--	2	2	6	1	6	5
Some Difficulty	5	2	1	10	3	3	3	--	--	2	5	1	3	--	1	3	2	1	2
Necessities Only	16	25	13	20	17	24	30	9	16	23	23	11	7	12	15	22	17	21	17
Comfortable	68	60	69	50	68	65	62	76	79	66	67	73	72	75	69	65	69	66	67
Well-to-Do and Wealthy	8	12	15	--	9	5	--	13	5	8	2	12	17	11	13	5	10	6	9
Total	100	101	100	100	100	101	99	99	100	101	100	100	99	100	100	101	99	100	100
N	152	52	243	10	1219	302	69	152	38	123	129	146	29	132	150	65	252	114	110

(Table A-13 continued)

	Junior Colleges											State Colleges				
Family Income	A %	B %	C %	D %	E %	F %	G %	H %	I %	J %	K %	A %	B %	C %	D %	E %
Frequent Difficulty	--	4	--	6	3	3	3	1	2	9	7	4	4	9	4	8
Some Difficulty	2	2	--	4	7	6	--	4	4	5	7	3	3	4	5	4
Necessities Only	29	28	8	26	13	21	19	26	39	27	19	21	19	21	18	25
Comfortable	66	65	85	64	68	68	69	66	55	59	65	69	70	63	65	60
Well-to-Do and Wealthy	3	2	8	2	10	3	9	3	--	--	3	3	5	3	8	3
Total	100	101	101	102	101	101	100	100	100	100	101	100	101	100	100	100
N	91	51	26	55	31	107	32	94	51	22	31	417	538	141	104	142

Table A-14

Percentage of Male Minnesota Freshmen in Each College
Reporting Extent of Expected Family Help with College Expenses

	University of Minnesota						Private Liberal Arts Colleges								Catholic Men's Colleges		
Extent of Help	Ag %	Ed %	GC %	IT %	SIA %	Mor %	A %	B %	C %	D %	E %	F %	G %	H %	A %	B %	C %
Pay All Expenses	5	8	9	6	8	13	11	3	2	11	8	12	6	7	8	10	9
Pay Most of Expenses	34	27	26	25	27	27	45	27	27	20	31	29	32	30	30	27	25
Pay Some of Expenses	50	50	48	53	50	52	39	62	57	51	49	56	54	51	49	48	50
Pay None of Expenses	12	15	16	17	15	8	5	8	13	18	12	2	8	12	13	15	16
Total	101	100	99	101	100	100	100	100	99	100	100	99	100	100	100	100	100
N	191	26	427	594	1104	101	148	37	121	114	106	41	112	124	212	337	76

(Table A-14 continued)

	Junior Colleges											State Colleges				
	A	B	C	D	E	F	G	H	I	J	K	A	B	C	D	E
Extent of Help	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Pay All Expenses	4	4	2	12	6	18	9	4	11	11	9	7	5	4	7	8
Pay Most of Expenses	42	14	30	38	39	28	32	31	43	25	35	27	32	25	30	29
Pay Some of Expenses	46	55	49	40	42	46	47	49	34	43	44	51	51	53	44	48
Pay None of Expenses	7	28	19	11	14	8	12	16	11	21	12	15	12	18	18	15
Total	99	101	100	101	101	100	100	100	99	100	100	100	100	100	99	100
N	97	51	53	85	36	107	57	116	44	56	34	355	448	121	99	157

Table A-15

Percentage of Female Minnesota Freshmen in Each College Reporting Extent of Expected Family Help with College Expenses

	University of Minnesota						Private Liberal Arts Colleges								Catholic Women's Colleges			
Extent of Help	Ag %	Ed %	GC %	IT %	SLA %	Mor %	A %	B %	C %	D %	E %	F %	G %	H %	A %	B %	C %	D %
Pay All Expenses	13	9	29	--	16	12	20	29	11	19	27	24	13	22	12	18	17	23
Pay Most of Expenses	37	37	37	33	33	45	51	37	40	34	44	31	51	42	32	33	43	37
Pay Some of Expenses	41	28	30	56	41	33	26	34	44	39	26	38	32	32	45	41	36	34
Pay None of Expenses	8	26	4	11	10	10	3	--	5	7	3	7	5	4	12	7	4	6
Total	99	100	100	100	100	100	100	100	100	99	100	100	101	100	101	99	100	100
N	135	46	185	9	1140	58	149	35	114	124	145	29	130	149	60	230	105	97

(Table A-15 continued)

	Junior Colleges											State Colleges				
	A	B	C	D	E	F	G	H	I	J	K	A	B	C	D	E
Extent of Help	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Pay All Expenses	21	18	29	14	31	37	18	15	22	7	20	12	17	20	11	14
Pay Most of Expenses	41	15	43	44	31	25	43	41	43	20	35	33	36	32	39	31
Pay Some of Expenses	32	50	21	39	31	31	32	32	24	60	45	48	38	37	38	39
Pay None of Expenses	6	18	7	3	8	7	7	12	11	13	--	7	9	11	12	16
Total	100	101	100	100	101	100	100	100	100	100	100	100	100	100	100	100
N	78	34	14	36	26	91	28	74	46	15	20	348	454	119	90	122

Table A-16

Percentage of Male Minnesota Freshmen in Each College Reporting Families' Feelings Toward College

	University of Minnesota						Private Liberal Arts Colleges								Catholic Men's Colleges		
Family's Feelings	Ag %	Ed %	GC %	IT %	SIA %	Mor %	A %	B %	C %	D %	E %	F %	G %	H %	A %	B %	C %
Insists I Go	12	13	14	13	18	10	24	19	12	10	17	38	20	19	16	20	12
Wants Me to Go	79	84	82	84	79	79	74	78	86	88	81	62	80	80	82	77	88
Indifferent	9	3	4	2	3	12	2	3	2	2	2	--	--	--	2	3	--
Doesn't Want Me to Go	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	1	--
Won't Allow Me to Go	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	100	100	100	99	100	101	100	100	100	100	100	100	100	100	100	101	100
N	226	31	536	615	1187	113	148	36	129	115	108	42	114	133	220	354	76

(Table A-16 continued)

	Junior Colleges											State Colleges				
Family's Feelings	A %	B %	C %	D %	E %	F %	G %	H %	I %	J %	K %	A %	B %	C %	D %	E %
Insists I Go	16	14	21	9	26	33	26	14	17	14	3	9	9	13	12	10
Wants Me to Go	82	78	75	81	71	66	71	80	83	77	95	82	82	77	82	83
Indifferent	3	8	4	9	2	1	3	5	--	8	3	9	9	10	5	6
Doesn't Want Me to Go	--	--	--	1	--	--	--	--	--	--	--	--	--	1	1	1
Won't Allow Me to Go	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	101	100	100	100	99	100	100	99	100	99	101	100	100	101	100	100
N	109	63	56	101	42	123	66	133	46	71	39	433	568	156	115	187

Table A-17

Percentage of Female Minnesota Freshmen in Each College Reporting Families' Feelings Toward College

	University of Minnesota						Private Liberal Arts Colleges								Catholic Women's Colleges			
Family's Feelings	Ag %	Ed %	GC %	IT %	SLA %	Mor %	A %	B %	C %	D %	E %	F %	G %	H %	A %	B %	C %	D %
Insists I Go	12	9	10	20	9	1	16	2	8	5	15	24	18	11	6	14	10	7
Wants Me to Go	77	72	80	70	83	86	82	98	88	88	82	76	78	87	79	80	75	84
Indifferent	11	19	10	10	8	10	2	--	4	7	3	--	3	2	13	5	12	7
Doesn't Want Me to Go	--	--	--	--	--	3	--	--	--	1	1	--	1	--	2	1	4	1
Won't Allow Me to Go	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	100	100	100	100	100	100	100	100	100	101	101	100	100	100	100	100	101	99
N	151	53	240	10	1218	71	151	41	122	130	147	29	131	151	63	247	114	109

(Table A-17 continued)

	Junior Colleges											State Colleges				
	A	B	C	D	E	F	G	H	I	J	K	A	B	C	D	E
Family's Feelings	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Insists I Go	10	9	--	6	20	21	13	3	8	14	6	7	8	5	2	5
Wants Me to Go	83	68	74	70	63	75	81	76	82	73	81	82	79	83	82	87
Indifferent	7	23	26	20	17	3	6	18	10	14	13	9	12	9	14	6
Doesn't Want Me to Go	--	--	--	4	--	1	--	2	--	--	--	1	1	2	2	2
Won't Allow Me to Go	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	100	100	100	100	100	100	100	99	100	101	100	99	100	99	100	100
N	89	53	23	54	30	108	32	93	51	22	31	411	529	137	104	143

Table A-18

Percentage of Students in Each Minnesota College Planning on Graduate School

	University of Minnesota						Private Liberal Arts Colleges								Catholic Men's Colleges		
MALE	Ag	Ed	GC	IT	SLA	Mor	A	B	C	D	E	F	G	H	A	B	C
Percentage Planning on Graduate Work	24%	35%	19%	40%	37%	14%	49%	40%	48%	41%	47%	86%	44%	45%	35%	34%	22%
N Answering Item	156	20	290	384	619	71	89	20	86	79	62	21	61	71	127	188	45

	University of Minnesota						Private Liberal Arts Colleges								Catholic Women's Colleges			
FEMALE	Ag	Ed	GC	IT	SLA	Mor	A	B	C	D	E	F	G	H	A	B	C	D
Percentage Planning on Graduate Work	14%	13%	13%	40%	20%	14%	29%	30%	12%	20%	16%	67%	24%	15%	22%	24%	13%	23%
N Answering Item	119	40	143	5	873	43	114	30	94	103	116	21	107	108	46	174	80	70

(Table A-18 continued)

	Junior Colleges											State Colleges				
MALE	A	B	C	D	E	F	G	H	I	J	K	A	B	C	D	E
Percentage Planning on Graduate Work	27%	33%	15%	18%	6%	22%	30%	21%	74%	16%	19%	34%	19%	14%	17%	20%
N Answering Item	74	42	41	63	33	72	47	88	39	45	31	246	320	90	76	108
FEMALE	A	B	C	D	E	F	G	H	I	J	K	A	B	C	D	E
Percentage Planning on Graduate Work	13%	7%	--	3%	8%	8%	20%	16%	19%	17%	6%	12%	12%	14%	15%	15%
N Answering Item	71	29	10	33	24	77	20	58	36	12	17	255	376	101	75	96

Table A-19

Percentage of Male Minnesota Freshmen in Each College Reporting Various Numbers of Books in the Home

	University of Minnesota						Private Liberal Arts Colleges								Catholic Men's Colleges		
Number of Books in Home	Ag %	Ed %	GC %	IT %	SLA %	Mor %	A %	B %	C %	D %	E %	F %	G %	H %	A %	B %	C %
0 - 9	2	--	3	1	1	5	1	3	2	4	--	2	2	--	1	1	--
10 - 24	13	19	11	8	6	13	3	8	8	12	7	--	6	7	8	7	5
25 - 49	30	13	19	22	15	26	13	13	23	19	16	2	13	15	18	21	17
50 - 99	26	29	27	28	28	37	21	30	33	30	17	19	23	23	32	28	31
100 or more	28	39	40	42	50	19	63	48	35	35	60	76	56	55	41	43	47
Total	99	100	100	101	100	100	101	102	101	100	100	99	100	100	100	100	100
N	227	31	540	606	1172	115	149	40	127	116	109	42	114	133	217	353	77

(Table A-19 continued)

Number of Books in Home	Junior Colleges											State Colleges				
	A	B	C	D	E	F	G	H	I	J	K	A	B	C	D	E
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
0 - 9	2	5	--	1	--	4	3	1	--	4	13	5	3	5	4	5
10 - 24	14	11	11	18	19	10	15	13	15	15	8	14	14	18	11	9
25 - 49	32	25	33	24	40	29	32	19	15	35	30	24	26	29	29	29
50 - 99	24	30	32	37	33	36	23	30	22	25	28	29	30	23	28	26
100 or more	28	30	25	20	9	21	26	38	48	21	23	28	28	26	30	31
Total	100	101	101	100	101	100	99	101	100	100	102	100	101	101	102	100
N	108	64	57	98	43	124	65	133	46	72	40	433	572	157	112	187

Table A-20

Percentage of Female Minnesota Freshmen in Each College Reporting Various Numbers of Books in the Home

	University of Minnesota						Private Liberal Arts Colleges								Catholic Women's Colleges			
Number of Books in Home	Ag %	Ed %	GC %	IT %	SLA %	Mor %	A %	B %	C %	D %	E %	F %	G %	H %	A %	B %	C %	D %
0 - 9	1	--	1	--	1	4	--	--	2	1	1	--	1	2	2	2	2	1
10 - 24	7	11	8	--	6	14	3	3	11	7	7	3	2	6	11	6	11	5
25 - 49	22	30	23	10	18	23	9	19	23	36	17	10	11	15	24	21	21	17
50 - 99	34	28	32	10	30	34	27	24	34	27	26	7	30	28	35	27	29	34
100 or more	38	30	35	80	46	25	61	54	30	30	50	79	57	49	29	43	38	44
Total	102	99	99	100	101	100	100	100	100	101	101	99	101	100	101	99	101	101
N	152	53	237	10	1214	71	150	37	122	131	145	29	131	152	66	249	112	108

(Table A-20 continued)

Number of Books in Home	Junior Colleges											State Colleges				
	A %	B %	C %	D %	E %	F %	G %	H %	I %	J %	K %	A %	B %	C %	D %	E %
0 - 9	3	10	13	5	3	9	3	3	2	--	3	3	3	4	2	2
10 - 24	11	17	13	19	23	9	9	13	12	18	14	12	15	15	11	18
25 - 49	25	25	33	19	33	26	16	30	31	27	41	26	26	27	23	20
50 - 99	28	23	17	25	30	36	34	23	37	23	10	30	31	36	32	27
100 or more	33	25	25	32	10	21	38	30	18	32	31	29	26	19	33	33
Total	100	100	101	100	99	101	100	99	100	100	99	100	101	101	101	100
N	91	52	24	57	30	104	32	92	51	22	29	417	533	138	104	141

Table A-21

Percentage of Male Minnesota Freshmen in Each College Reporting When They Will Marry

	University of Minnesota						Private Liberal Arts Colleges								Catholic Men's Colleges		
	Ag	Ed	GC	IT	SLA	Mor	A	B	C	D	E	F	G	H	A	B	C
When Marry	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Already Married	--	--	--	--	--	1	--	--	--	1	--	--	--	--	--	--	--
This Year	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Next Year	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
In a Few Years	21	28	19	20	20	20	16	23	25	26	16	17	19	23	21	15	20
Can't Say	69	53	63	69	66	72	69	77	59	65	72	73	68	68	65	70	71
Not Planning on Marriage	10	19	18	10	14	7	15	--	16	9	12	10	12	9	15	15	9
Total	100	100	100	99	100	100	100	100	100	101	100	100	99	100	101	100	100
N	229	32	547	613	1188	112	147	39	128	117	109	41	113	132	219	355	76

(Table A-21 continued)

	Junior Colleges											State Colleges				
When Marry	A %	B %	C %	D %	E %	F %	G %	H %	I %	J %	K %	A %	B %	C %	D %	E %
Already Married	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--
This Year	--	--	--	1	2	--	--	--	--	--	--	--	--	1	1	1
Next Year	--	--	--	--	--	1	--	1	--	1	--	1	1	--	--	1
In a Few Years	15	16	9	24	14	19	22	29	16	13	28	21	24	24	21	24
Can't Say	71	56	72	64	58	66	54	62	73	78	60	65	63	66	68	63
Not Planning on Marriage	15	29	19	12	26	14	24	7	11	8	13	14	12	10	10	12
Total	101	101	100	101	100	100	100	99	100	100	101	101	100	101	100	101
N	109	63	57	102	43	126	67	134	44	72	40	433	568	157	115	190

Table A-22

Percentage of Female Minnesota Freshmen in Each College
Reporting When They Will Marry

	University of Minnesota						Private Liberal Arts Colleges								Catholic Women's Colleges			
When Marry	Ag %	Ed %	GC %	IT %	SLA %	Mor %	A %	B %	C %	D %	E %	F %	G %	H %	A %	B %	C %	D %
Already Married	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
This Year	--	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Next Year	2	--	--	--	1	--	--	3	--	1	1	--	--	1	--	--	--	--
In a Few Years	42	25	41	20	31	15	30	37	33	35	29	38	34	28	22	23	32	22
Can't Say	51	66	51	60	60	76	64	58	59	60	66	62	61	59	62	64	58	55
Not Planning on Marriage	5	8	8	20	8	8	6	3	9	5	3	--	5	12	17	14	10	23
Total	100	101	100	100	99	99	100	101	101	101	99	100	100	100	101	101	100	100
N	152	53	242	10	1225	71	153	38	123	130	146	29	131	152	65	247	114	110

(Table A-22 continued)

	Junior Colleges											State Colleges				
When Marry	A %	B %	C %	D %	E %	F %	G %	H %	I %	J %	K %	A %	B %	C %	D %	E %
Already Married	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
This Year	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--
Next Year	1	6	--	4	--	--	--	1	--	--	--	--	--	--	1	1
In a Few Years	16	20	19	41	35	35	27	24	33	36	35	28	27	30	29	33
Can't Say	66	56	62	50	52	50	52	65	53	55	55	65	66	59	62	59
Not Planning on Marriage	16	18	19	5	13	15	21	8	14	9	10	6	7	11	9	7
Total	99	100	100	100	100	100	100	99	100	100	100	99	100	100	101	100
N	91	50	26	56	31	106	33	95	51	22	31	418	538	140	104	142

Table A-23

Mean Personality Scale Scores of Male Students in Each College

	University of Minnesota						Private Liberal Arts Colleges								Catholic Men's Colleges		
	Ag	Ed	GC	IT	SLA	Mor	A	B	C	D	E	F	G	H	A	B	C
Social Relations	4.2	--	3.8	4.2	3.4	4.1	3.0	3.1	4.0	3.4	3.3	2.2	3.3	3.7	3.8	3.4	3.4
Conformity	1.9	--	2.6	1.9	2.1	2.4	1.9	2.0	2.2	2.0	1.9	1.3	1.7	2.1	2.1	2.3	2.3
Factor A - Shyness	2.5	--	2.2	2.5	2.0	2.5	1.8	2.1	2.7	2.0	1.9	1.3	2.0	2.4	2.4	2.1	2.2
Factor B - Rebellion	1.0	--	1.7	1.1	1.4	1.4	1.2	1.2	1.3	1.2	1.2	.7	1.1	1.3	1.3	1.5	1.5
Factor C - Stagefright	2.5	--	2.4	2.3	1.9	2.3	1.8	2.0	2.2	1.9	1.9	1.2	1.7	2.1	2.1	2.0	1.8
Factor D - Raw Deal	.5	--	.7	.6	.7	.7	.6	.5	.7	.7	.6	.3	.6	.6	.6	.7	.7
Factor E - Sociability	8.4	--	8.7	8.2	8.7	8.3	8.7	8.9	8.3	8.7	8.8	9.2	8.6	8.4	8.5	8.7	8.6
N	231	--	549	617	1193	115	149	38	129	114	108	42	113	133	220	358	79

(Table A-23 continued)

	Junior Colleges											State Colleges				
	A	B	C	D	E	F	G	H	I	J	K	A	B	C	D	E
Social Relations	4.4	4.2	4.0	4.2	4.3	4.0	4.2	4.1	3.7	4.9	4.4	3.6	3.9	4.2	3.8	4.0
Conformity	2.5	2.3	2.4	2.2	2.6	2.7	2.4	2.4	2.0	2.3	1.9	2.2	2.6	2.5	2.6	2.1
Factor A - Shyness	2.7	2.6	2.1	2.5	2.4	2.2	2.5	2.5	2.6	2.9	2.5	2.2	2.3	2.5	2.2	2.3
Factor B - Rebellion	1.5	1.5	1.7	1.4	1.9	1.9	1.5	1.6	1.3	1.3	1.0	1.4	1.7	1.7	1.8	1.4
Factor C - Stagefright	2.6	2.5	2.5	2.4	2.6	2.4	2.6	2.5	1.9	2.7	2.7	2.2	2.3	2.4	2.4	2.5
Factor D - Raw Deal	.7	.8	.9	.7	.5	.9	.5	.7	.4	.6	.7	.7	.8	.8	.8	.7
Factor E - Sociability	8.3	8.4	8.4	8.3	8.5	8.4	8.5	8.5	8.4	7.9	8.4	8.6	8.5	8.4	8.6	8.6
Number	109	64	57	100	43	126	67	133	46	72	40	435	575	158	114	191

Table A-24

Mean Personality Scale Scores of Female Students in Each College

	University of Minnesota						Private Liberal Arts Colleges								Catholic Women's Colleges			
	Ag	Ed	GC	IT	SLA	Mor	A	B	C	D	E	F	G	H	A	B	C	D
Social Relations	3.3	3.3	3.1	--	3.1	4.3	3.2	3.1	3.3	3.4	2.8	3.0	3.1	3.7	3.8	3.0	3.6	3.3
Conformity	1.7	1.9	2.3	--	1.7	1.9	1.6	1.2	1.5	1.6	1.6	1.6	1.5	1.7	1.7	1.5	1.6	1.8
Factor A - Shyness	2.1	1.9	1.8	--	1.9	2.7	2.0	1.8	2.2	2.2	1.8	1.8	1.9	2.5	2.6	1.8	2.4	2.1
Factor B - Rebellion	1.1	1.3	1.5	--	1.0	1.1	1.0	.6	.8	1.0	1.0	1.1	.9	.9	1.0	1.0	.9	1.2
Factor C - Stagefright	2.0	2.1	2.2	--	2.0	2.4	1.9	2.2	2.0	2.0	1.8	1.4	1.8	2.2	2.2	1.9	2.3	2.1
Factor D - Raw Deal	.6	.7	.7	--	.6	.6	.6	.3	.4	.5	.6	.8	.5	.5	.6	.5	.4	.7
Factor E - Sociability	8.8	8.7	9.1	--	8.9	8.1	8.8	9.3	8.8	8.7	9.0	8.5	8.8	8.5	8.4	8.9	8.7	8.8
N	152	53	243	--	1230	71	153	38	123	131	147	29	132	152	66	251	114	109

(Table A-24 continued)

	Junior Colleges											State Colleges				
	A	B	C	D	E	F	G	H	I	J	K	A	B	C	D	E
Social Relations	3.5	4.1	--	3.6	3.2	3.5	3.8	4.0	3.8	--	4.1	3.4	3.6	3.5	3.6	3.4
Conformity	1.8	1.8	--	1.9	1.5	2.1	1.9	2.1	2.1	--	2.0	1.8	1.9	1.7	2.1	1.8
Factor A - Shyness	2.2	2.6	--	2.2	1.8	2.1	2.3	2.8	2.5	--	2.9	2.2	2.2	2.1	2.2	1.9
Factor B - Rebellion	1.1	1.0	--	1.2	.8	1.5	1.2	1.2	1.2	--	.9	1.1	1.2	1.0	1.2	1.1
Factor C - Stagefright	2.3	2.5	--	2.4	2.2	2.3	2.3	2.6	2.2	--	2.6	2.2	2.3	2.3	2.4	2.2
Factor D - Raw Deal	.6	.7	--	.6	.4	.7	.6	.7	.7	--	.4	.6	.7	.5	.6	.6
Factor E - Sociability	8.8	8.2	--	8.8	9.3	8.8	8.7	8.6	8.4	--	8.5	8.8	8.7	8.7	8.8	9.0
Number	90	52	--	56	31	108	32	95	51	--	31	419	529	141	104	144

Table A-25

Percentage of Students in Each Minnesota College Answering the Question,
"Would You Say That Your High School Grades Are a Fairly Accurate Reflection of Your Ability?"

	University of Minnesota							Private Liberal Arts Colleges								Catholic Men's Colleges		
Answer	Ag %	Ed %	GC %	IT %	SLA %	Dul %	Mor %	A %	B %	C %	D %	E %	F %	G %	H %	A %	B %	C %
MALE																		
Yes	51	47	27	61	45	45	50	50	31	50	52	61	74	57	55	61	46	58
No	46	53	72	37	52	53	49	50	64	47	47	39	26	41	43	37	53	41
Other	3	--	2	2	3	2	1	1	6	2	1	--	--	2	2	1	1	1
Total	100	100	101	100	100	100	100	101	101	99	100	100	100	100	100	99	100	100
Male N	231	32	552	619	1197	408	115	149	36	129	117	109	42	114	133	220	356	79

	University of Minnesota							Private Liberal Arts Colleges								Catholic Women's Colleges			
Answer	Ag %	Ed %	GC %	IT %	SLA %	Dul %	Mor %	A %	B %	C %	D %	E %	F %	G %	H %	A %	B %	C %	D %
FEMALE																			
Yes	68	62	33	80	69	63	73	78	73	70	79	71	90	86	76	77	76	79	76
No	31	34	65	20	29	36	27	20	22	30	20	29	10	12	23	20	23	18	22
Other	1	4	3	--	2	1	--	3	5	--	2	--	--	2	1	3	1	4	2
Total	100	100	101	100	100	100	100	101	100	100	101	100	100	100	100	100	100	101	100
Female N	152	53	243	10	1233	308	71	153	41	123	131	147	29	132	152	65	252	114	109

(Table A-25 continued)

	Junior Colleges											State Colleges				
	A	B	C	D	E	F	G	H	I	J	K	A	B	C	D	E
Answer	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
MALE																
Yes	47	38	37	40	40	30	34	32	50	47	40	37	34	39	32	38
No	53	63	63	58	61	68	64	66	50	53	55	61	63	58	66	60
Other	--	--	--	2	--	2	2	2	--	--	5	2	3	3	2	2
Total	100	101	100	100	101	100	100	100	100	100	100	100	100	100	100	100
Male N	109	64	57	100	43	126	67	134	46	72	40	435	575	158	115	191

	Junior Colleges											State Colleges				
	A	B	C	D	E	F	G	H	I	J	K	A	B	C	D	E
Answer	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
FEMALE																
Yes	64	43	71	63	61	56	55	71	71	68	58	65	62	73	66	71
No	34	55	29	38	39	39	39	26	28	32	39	32	37	26	33	29
Other	2	2	--	--	--	6	6	3	2	--	3	2	2	1	1	1
Total	100	100	100	101	100	101	100	100	101	100	100	99	101	100	100	101
Female N	91	53	24	56	31	109	33	95	51	22	31	420	540	141	104	144

Table A-26

Comparison of Correlation Coefficients Between College Grade Point Average and Certain Ability and Socioeconomic Variables

	Male																
	University of Minnesota						Private Liberal Arts Colleges								Catholic Men's Colleges		
Variable	Ag	GC	IT	SLA	Dul	Mor	A	B	C	D	E	F	G	H	A	B	C
HSR	+.67	+.35	+.54	+.38	+.58	+.74	+.52	+.45	+.48	+.68	+.66	+.21	+.48	+.58	+.54	+.52	+.66
MSAT	+.39	+.17	+.40	+.30	+.42	+.37	+.48	+.63	+.36	+.40	+.50	+.48	+.23	+.43	+.35	+.40	+.38
Father's Educ	-.06	+.01	+.02	+.07	+.20	-.27	+.18	+.23	-.05	-.06	-.17	-.30	-.11	-.08	-.14	-.09	-.05
Mother's Educ	+.01	-.13	+.04	+.13	+.21	+.09	+.09	-.07	+.07	-.04	-.11	-.27	+.01	+.05	-.08	-.06	-.19
Adeq of Income	-.04	-.01	-.06	-.01	+.07	-.17	-.25	-.03	-.24	-.01	-.03	-.39	+.11	-.05	-.17	-.09	-.14
Family Help	+.11	+.05	-.02	-.04	-.00	-.05	+.10	-.17	+.09	+.16	+.12	+.17	+.00	+.02	+.18	-.04	+.35
No. of Books	-.07	+.02	+.00	+.06	+.09	+.17	+.02	+.10	-.15	-.00	+.03	-.17	+.01	-.04	-.14	+.04	+.07
Live on Farm	+.20	+.07	+.03	+.06	-.02	+.36	-.10	-.02	+.01	-.10	+.13	-.02	+.31	+.08	-.03	+.12	-.05
Family Attitude	-.04	+.05	-.03	-.01	-.03	+.01	+.17	+.11	-.02	-.01	-.05	+.21	-.13	+.05	-.04	+.04	+.17
Number	164	351	461	839	305	40	115	25	87	78	90	33	80	114	178	269	54

(Table A-26 continued)

	Junior Colleges											State Colleges				
Variable	A	B	C	D	E	F	G	H	I	J	K	A	B	C	D	E
HSR	+.76	+.63	+.71	+.62	+.64	+.66	+.70	+.45	+.50	+.73	+.79	+.60	+.61	+.60	+.71	+.57
MSAT	+.57	+.53	+.41	+.45	+.36	+.46	+.43	+.19	+.49	+.59	+.38	+.46	+.44	+.30	+.49	+.38
Father's Educ	+.20	+.13	+.03	+.04	+.11	+.16	+.25	-.03	+.00	+.18	-.27	-.12	-.04	-.22	+.28	+.07
Mother's Educ	+.03	+.09	+.13	+.03	+.22	+.18	+.39	+.05	+.01	+.27	-.05	-.06	-.00	-.12	+.12	+.08
Adeq of Income	-.11	+.20	-.09	-.08	+.10	-.09	-.16	+.20	+.23	+.00	-.25	-.05	-.11	-.21	-.15	-.06
Family Help	-.10	+.11	+.01	+.07	+.02	-.10	+.09	-.18	-.02	+.10	-.11	+.12	+.12	+.22	+.00	+.17
No. of Books	+.17	-.09	-.02	-.04	-.05	+.01	+.16	-.04	-.03	-.08	+.25	+.04	-.13	-.16	+.29	-.06
Live on Farm	+.08	-.14	+.20	+.06	-.12	+.02	-.10	+.02	+.09	+.06	+.55	+.04	+.06	+.13	-.08	+.05
Family Attitude	-.15	-.02	-.26	+.08	-.08	+.12	-.15	+.07	-.08	+.05	-.09	-.06	+.04	+.02	-.15	+.09
Number	85	47	49	76	36	90	50	88	37	54	23	329	431	101	88	143

(Table A-26 continued)

	Female																	
	University of Minnesota						Private Liberal Arts Colleges								Catholic Women's Colleges			
Variable	Ag	Ed	GC	SLA	Dul	Mor	A	B	C	D	E	F	G	H	A	B	C	D
HSR	+.68	+.46	+.40	+.35	+.59	+.52	+.54	+.48	+.56	+.72	+.53	-.10	+.44	+.60	+.55	+.60	+.53	+.75
MSAT	+.65	+.63	+.26	+.33	+.54	+.58	+.35	+.38	+.53	+.57	+.58	+.41	+.29	+.48	+.65	+.45	+.65	+.59
Father's Educ	-.04	+.25	+.02	+.04	-.14	+.14	+.06	+.18	+.02	+.05	+.03	-.06	+.19	-.05	+.14	-.01	-.02	+.05
Mother's Educ	-.01	+.11	+.08	+.09	+.04	-.05	+.15	+.05	-.01	-.01	-.05	+.12	+.09	+.16	+.24	+.01	+.04	-.17
Adeq of Income	+.11	-.11	-.16	+.02	-.04	-.07	+.16	-.01	-.15	-.09	-.18	-.14	-.22	-.16	+.04	-.18	-.03	+.06
Family Help	+.09	+.01	+.12	+.00	-.01	+.06	-.01	-.36	+.39	+.33	+.22	-.18	+.30	+.05	+.11	+.15	+.39	+.19
No. of Books	+.10	+.08	-.08	+.07	-.01	+.31	+.03	+.04	+.04	-.04	+.10	+.04	+.07	+.03	-.15	-.01	-.03	-.06
Live on Farm	+.12	+.08	+.05	+.05	+.06	-.16	-.03	-.10	+.07	+.02	+.10	-.23	-.17	+.09	-.32	+.09	+.09	+.03
Family Attitude	+.14	+.01	-.06	+.01	+.03	+.10	+.00	-.39	+.19	+.12	-.11	+.05	-.11	-.10	-.08	+.22	+.20	+.19
Number	119	40	163	917	232	44	123	29	102	105	117	21	105	125	52	173	83	86

(Table A-26 continued)

Variable	Junior Colleges A	B	C	D	E	F	G	H	I	J	K	State Colleges A	B	C	D	E
HSR	+.70	+.67	--	+.53	+.75	+.50	+.81	+.69	+.75	--	+.48	+.69	+.72	+.74	+.76	+.66
MSAT	+.66	+.43	--	+.34	+.49	+.52	+.70	+.49	+.70	--	+.41	+.62	+.54	+.67	+.75	+.62
Father's Educ	+.11	+.03	--	-.08	-.18	+.22	+.43	+.01	-.09	--	+.07	-.03	-.12	+.11	+.11	-.05
Mother's Educ	+.11	-.02	--	-.13	+.24	+.07	-.12	+.27	+.07	--	-.05	-.02	-.01	+.09	-.14	-.01
Adeq of Income	+.08	+.07	--	+.03	-.18	-.07	+.08	-.10	-.12	--	-.17	-.16	-.04	-.11	-.19	-.29
Family Help	+.16	+.03	--	-.02	+.19	+.03	-.03	-.20	-.03	--	+.17	+.26	+.16	+.08	+.13	+.33
No. of Books	+.11	+.20	--	-.08	+.14	+.00	+.21	-.00	-.09	--	+.36	+.05	-.02	+.13	+.07	-.04
Live on Farm	+.00	+.17	--	+.09	+.24	-.19	-.46	+.00	+.31	--	+.21	+.17	+.15	+.07	+.05	+.12
Family Attitude	+.08	+.07	--	+.30	+.07	+.05	+.43	-.08	+.17	--	-.19	+.13	+.01	-.06	-.20	-.04
Number	76	38	--	33	24	69	26	70	43	--	21	301	409	106	76	111

UNIVERSITY OF MINNESOTA
OFFICE OF THE DEAN OF STUDENTS
STUDENT COUNSELING BUREAU
1961

INSTRUCTIONS TO ADMINISTRATORS OF THE "AFTER HIGH SCHOOL—WHAT?" QUESTIONNAIRE

Before giving the questionnaires to the students, please read this for your own information:

This questionnaire is part of a study to determine why high school seniors attend, or do not attend college. Since this questionnaire is being given to all of the high school seniors in the state, the method of presenting the questionnaire must be uniform in all schools. Some of the questions ask for information about which students may be uncertain, or in some cases, ignorant. We are anticipating, therefore, that a number of questions will be asked of the administrators about the questionnaire. Here is a list of the recommendations about how to handle such questions, or how certain items on the questionnaire should be answered.

The two spaces in the upper right-hand corner are to be left blank.

Item 7. *Name.* We would like the formal name of the student—not nickname.

Item 24. *Occupation of father.* This is an attempt to classify the occupational level of the father. Not all of the occupations have been listed of course, but the major headings have been given and examples are listed in each occupational level. If a student raises the question of an occupation which is not listed among the examples, he should be told to match his father's occupation with the sample listed. If he cannot do this, he should then use the "other" category.

On items 27 and 28 which are concerned with the source of *family income* and the verbal description of the family income, some students may raise objections. They should be reassured that the information will be kept confidential.

Item 29, *course or curriculum taken in high school.* Some students may be taking more than one of the courses. In case college preparatory is one of the courses, they should give that priority and check only that.

Item 39 concerned with the *extent to which the family will help pay college expenses* should be answered only by those who are going to college. If their intention is to go to trade school or business school, they should leave this question blank.

Item 44 concerned with possible *attendance in a graduate or professional* (medicine, dentistry, law, etc.) *school* would *not* include the fifth year in five year engineering program or night school courses unless leading to a specific graduate degree.

Item 61 should be answered in the negative by students whose *participation in running the farm* has been limited to helping with farm chores or summer work. An affirmative answer should be given by students who have had a major responsibility for some or all aspects of the farm operation or who have an extensive farm project of their own as would be the case with a major 4-H project.

On items 21-46 (page 4), T should be circled if the student feels the statement is *true* or *mostly true* as it applies to him and F should be circled if the statement is *false* or *not usually true* as it applies to him. Stu-

(OVER)

dents should answer all the items they can and leave as few as possible blank. It may be suggested that students answer these items quickly and not spend too much time on any one question.

In general, on questions which students feel they cannot answer with a reasonable guess, it is the best policy for them to write that they don't know.

INSTRUCTIONS TO STUDENTS TO BE READ TO THEM BY THE ADMINISTRATOR OF THE "AFTER HIGH SCHOOL—WHAT?" QUESTIONNAIRE

This questionnaire is a way of finding out what high school seniors all over the state of Minnesota are planning to do next year and also what the reasons for their plans are. Some of the questions ask you to describe certain aspects of your family and how they feel about your plans. Because families differ quite a bit in their way of life and their ideas, it is necessary to have this information about the family in order to understand why students make the kinds of plans they do. All of the information you give will be strictly confidential. No unauthorized person will see the information. The answers will be punched on cards without your name and will be compiled statistically for all of the students.

The results which will be obtained from this survey will be used in planning educational facilities for yourselves and for future generations of students, so we ask you to answer accurately. Some of the questions you will find difficult to answer because you may not have sufficient information. If you feel, however, that you can make a good guess, answer by guessing. If you feel you cannot make a good guess, ask me for instructions. All questions will not be completely meaningful for all students; however, you are asked to give a serious and thoughtful answer to each item, even if it does not appear to be very significant for you.

Now go ahead and start filling out the questionnaire, remember to use your full name; don't use your nickname.

UNIVERSITY OF MINNESOTA
OFFICE OF THE DEAN OF STUDENTS
STUDENT COUNSELING BUREAU

H.S. ______________ 1-3

Iden. No. ______________ 4-6

After High School—What?
For High School Seniors
1961

In order to provide information about what high school seniors are planning for the next year and to show the reasons for these plans, ou are being asked to answer the questions below.

Write in the answer or place a check mark (√) before the appropriate word or phrase.

7-20. Name (Print)____
Last First Middle

21. (1)______Male (2) ______Female

2-23. Age last birthday__________ years

24. Occupation of father: (Check the item which applies)
(1)________Profession (lawyer, banker, doctor, teacher, minister, dentist, etc.)
(2)________Owns or manages business (store, gas station or garage, photography or barber shop, insurance agency, hotel or cafe, repair shop, newspaper, etc.)
(3)________Office work (bookkeeper, cashier, postal clerk, etc.)
(4)________Sales (insurance, real estate, retail store, etc.)
(5)________Owns or manages farm
(6)________Skilled tradesman (carpenter, electrician, machinist)
(7)________Factory worker (laborer, farm laborer, janitor, mine laborer)
(   ) Other occupations: (Be specific)
____
(Write in name of occupation)

25. Education of father: (Check highest level attained)
(1)________Did not attend school
(2)________Some grade school
(3)________Completed eighth grade
(4)________Some high school
(5)________Graduated from high school
(6)________Business or trade school
(7)________Some college work (including teacher training)
(8)________Graduated from college
(9)________Holds more than one college degree

26. Education of mother: (Check highest level attained)
(1)________Did not attend school
(2)________Some grade school
(3)________Completed eighth grade
(4)________Some high school
(5)________Graduated from high school
(6)________Business or trade school
(7)________Some college work (including teacher training)
(8)________Graduated from college
(9)________Holds more than one college degree

27. Which of the following ways best describes how your family gets its income? (Check the one phrase which best applies)
(1)________Professional fees or business profits (Including profits from farms)
(2)________Fixed salary (Paid on a monthly or yearly basis)
(3)________Wages (Paid on an hourly or daily basis and depending on number of hours worked)
(4)________Income from investments (Stocks, bonds, real estate, insurance)
(5)________Pensions (Government or other)

28. Check the phrase which best describes your family's income:
(1)________Frequently have difficulty making ends meet
(2)________Sometimes have difficulty in getting the necessities
(3)________Have all the necessities but not many luxuries
(4)________Comfortable but not well-to-do
(5)________Well-to-do
(6)________Wealthy

29. Course or curriculum taken in high school: (Check the one which best describes your course)
(1)________Commercial (2)________Agriculture (3)________Shop or Technical (4)________College Preparatory (5)________General
(   ) Other____
(Write in)

30-31. Check the most important reason or reasons why you originally selected the course you checked in item 29:

30

(1)________Only one offered in school

(2)________Teacher's advice

(3)________Counselor's advice

(4)________Parent's advice

(5)________Required to by school

(6)________Brothers or sisters took it

(7)________Seemed easiest

(8)________Required by parents

31

(1)________Was best in this work

(2)________Fitted vocational plans best

(3)________Course seemed most interesting

(4)________Friends took it

(5)________Brother's or sister's advice

(6)________"Everyone else" took it

(7)________Don't know

(   ) Other________________________
(Write in)

32-33-34. What are your plans for next year (1961-1962)? (Check the one plan you are now most seriously considering)

32 | 33-34

(1)________Get a job.. If yes, what kind of work?________________

(2)________Work for parents.. If yes, what kind of work?________________

(3)________Go to college... If yes, which college?________________

(4)________Go to trade school.. If yes, which school?________________

(5)________Go to business school..................................... If yes, which school?________________

(6)________Go to other school.. If yes, which school?________________

(7)________Do postgraduate work in high school

(8)________Enter the Military Service

(9)________Other________________________________
(Write in)

35-36. Check the reasons for making the plans you indicated above:

35

(1)________To prepare for a vocation

(2)________To be with old school friends

(3)________To get a liberal education

(4)________To start making money quickly

(5)________To please parents or friends

(6)________To be independent

(7)________To make friends and helpful connections

36

(1)________It is "the thing to do"

(2)________Foregone conclusion, never questioned why

(3)________Will enable me to make more money

(4)________"Everyone here" does this

(5)________Tired of studying, have had enough education

(6)________Only thing I can afford to do

(7)________Like school

(8)________ Other________________________
(Explain)

37. Has marriage or the early prospect of marriage influenced your plans for the coming year?

(1)________Yes (2)________No

38. In your present thinking, have you any idea when you plan to get married?

(1)________Already married

(2)________This year

(3)________Next year

(4)________In a few years

(5)________Can't say

(6)________Not planning on marriage

39. If you are going to college next year (1961-1962), to what extent will your family help you pay expenses?

(1)________Pay all my expenses

(2)________Pay most of my expenses

(3)________Pay some of my expenses

(4)________Pay none of my expenses

40. If you are not going to college, would you change your plans and attend college if you had more money?

(1)________Yes (0)________No

41. If you checked "Yes" to the last item, how much more money would you need to attend college?

(1)________Enough to pay all my expenses

(2)________Enough to pay about half my expenses

(3)________Enough to pay less than half my expenses

42. If you are not going to college, could you afford to go if you wished to go?

(1)________Could afford it easily

(2)________Could barely afford it

(3)________Could afford it but it would involve many sacrifices

(4)________Could not afford it

68-69-70. To which of these organizations does your father or mother or both belong?

68
(1)__________P.T.A. or Mothers' Club
(2)__________American Legion or VFW
(3)__________Rotary
(4)__________Knights of Columbus
(5)__________Elks
(6)__________Masons
(7)__________Eastern Star
(8)__________Odd Fellows
(9)__________Rebeccas
(0)__________Lions

69
(1)__________Moose
(2)__________Eagles
(3)__________Labor Union
(4)__________Farm Bureau
(5)__________Farm Union
(6)__________Grange

69 (Cont.)
(7)__________Chamber of Commerce or Community Business Club
(8)__________Kiwanis
(9)__________Shrine
(0)__________Ladies' Aid

70
(1)__________League of Womens Voters
(2)__________Neighborhood or other social card playing group
(3)__________Country club or golf club
(4)__________Study or literary club
(5)__________American Automobile Association (AAA)
(6)__________A sportsman club
(7)__________American Association of University Women
(8)__________National origin group (such as Sons of Norway)
(9)__________Church club or group
(0)__________Athletic club or group
(x)__________Hobby club or group
(   ) Others__________________________

The following items are related to your attitudes, feelings, and experiences. Remember that all of the information on this questionnaire is treated as confidential. Circle T if the item is true for you and F if it is false.

21. T F I meet strangers easily.

22. T F I get along as well as the average person in social activities.

23. T F In school I sometimes have been sent to the principal for cutting up.

24. T F I feel self-conscious when reciting in class.

25. T F I am sure I get a raw deal from life.

26. T F I feel at ease with people.

27. T F At times I have very much wanted to leave home.

28. T F I have difficulty in starting a conversation with a person who has just been introduced.

29. T F I find it hard to keep my mind on a task or job.

30. T F I enjoy speaking before groups of people.

31. T F I know who is responsible for most of my troubles.

32. T F My parents have often objected to the kind of people I go around with.

33. T F I am rather shy in contacts with people.

34. T F No one seems to understand me.

35. T F I enjoy entertaining people.

36. T F My family does not like the work I have chosen or the work I intend to choose for my life work.

37. T F I like to meet new people.

38. T F My parents and family find more fault with me than they should.

39. T F I dislike social affairs.

40. T F If people had not had it in for me I would have been much more successful.

41. T F I find it easy to express my ideas.

42. T F I wish I were not so shy.

43. T F I avoid people when it is possible.

44. T F I have had very peculiar and strange experiences.

45. T F I stay in the background at parties or social gatherings.

46. T F Most of my close friends are planning to go to college.

47. Would you say that your high school grades are a fairly accurate reflection of your ability?

1.__________Yes 2.__________No

48. Do you think that most of the important things that happen to people are: (Check one)

(1)__________More the result of circumstances beyond their control.

(2)__________More the result of their own efforts.

49. If you had your choice, which type of job would you pick? (Check one)

(1)__________A job which pays quite a low income but which you are sure of keeping.

(2)__________A job which pays a good income but which you have a 50-50 chance of losing.

(3)__________A job which pays an extremely good income if you make the grade but in which you lose almost everything if you don't make it.

43. How does your family feel about your going to college?
(1)________Insists that I go
(2)________Wants me to go
(3)________Is indifferent
(4)________Doesn't want me to go
(5)________Won't allow me to go

44. If you are planning on college, are you considering any graduate or professional training after your undergraduate college work?
(1)________Yes (0)________No If "Yes," indicate type____

45. If you are not going to college next year, do you plan to go at some later date?
(x)________No
________Yes (If you checked "yes" here, indicate when you plan to attend college):
(1)________After 1 year (2)________After 2 years (3)________After 3 years (4)________After 4 or more years

46. Do you have a furnace or central heating in your home?
(1)________Yes (0)________No

47. Do you have running water in your home?
(1)________Yes (0)________No

48. Do you have both hot and cold running water?
(1)________Yes (0)________No

49. Do you have an electric or gas refrigerator?
(1)________Yes (0)________No

50. Do you have a telephone in your home?
(1)________Yes (0)________No

51. Does your family own or rent a deep freeze unit or a locker?
(1)________Yes (0)________No

52. Do you have electric lights in your home?
(1)________Yes (0)________No

(Items 53-59 in next column)

53. Do you have a television set in your home?
(1)________Yes (0)________No

54. Does your family own your home?
(1)________Yes (0)________No

55. How many people live in your home?........________( )

56. How many rooms are there in your home excluding the bath room?........________( )

57. How many people excluding yourself sleep in your room?........________( )

58. How many passenger cars does your family own? (Check)
0________ 1________ 2 or more________

59. What is the year and make of your family's newest car?
Year____________ Make______________ ( ) ( )

60. Do you live on a farm? (1)________Yes (0)________No

61. If you live on a farm, have you had a major responsibility for a part of its management?
(1)________Yes (0)________No

62. If you live on a farm, is there a place for you in its operation which would provide a good future for you if you should wish to stay?
(1)________Yes (0)________No

63. Approximately how many books does your family have in your home? (Check appropriate category)
(1)________ 0- 9
(2)________10-24
(3)________25-49
(4)________50-99
(5)________100-up

4-65-66. Which of these magazines does your family subscribe to or regularly buy?

64
(1)________Reader's Digest
(2)________Life
(3)________Saturday Evening Post
(4)________Look
(5)________McCall's Magazine
(6)________Ladies Home Journal
(7)________Better Homes and Gardens
(8)________Good Housekeeping
(9)________American Home
(0)________Coronet
(x)________Farm Journal

65
(1)________Redbook
(2)________National Geographic Magazine
(3)________Time
(4)________True
(5)________Parents' Magazine
(6)________Capper's Farmer
(7)________Argosy
(8)________Popular Mechanics
(9)________Popular Science
(0)________Newsweek
(x)________Successful Farming

66
(1)________U. S. News & World Report
(2)________Sports Afield
(3)________Sports Illustrated
(4)________Holiday
(5)________New Yorker
(6)________Fortune
(7)________The Farmer
(8)________Atlantic Monthly
(9)________Harper's

67. Others____